MARINE CORPS

Gazette

JUNE, 1946 30c

Beginning:

AMPHIBIOUS TACTICS

By LtGen Holland M. Smith

THIS MONTH'S COVER

THE cover portrait of LtGen Holland M. Smith is by the versatile Maj James A. Donovan, Jr., frequent editorial contributor to the GAZETTE—see "Let's Return to Fundamentals" on page 33. Twenty-nine year old Donovan, a Dartmouth graduate, went on active duty with the Marine Corps in 1940 after a year with the advertising firm, J. Walter Thompson Co. As a member of the 6th Marines he was at Tarawa, Saipan, and Tinian. He holds both the Silver and Bronze Star.

THE MARINE CORPS GAZETTE

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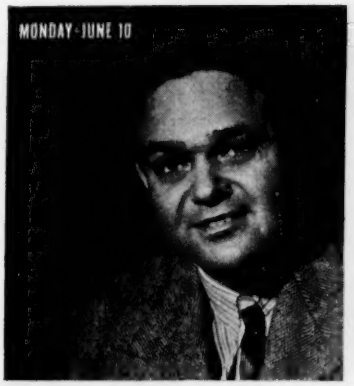
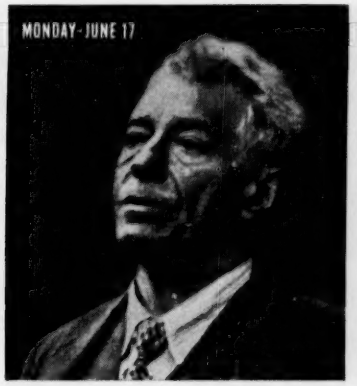
DONALD VOORHEES AND THE BELL TELEPHONE ORCHESTRA

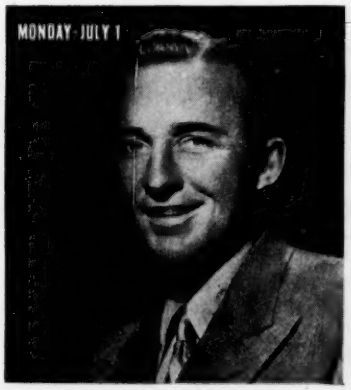


JAMES MELTON—One of America's favorite tenors. First New York appearance at Roxy Theatre. Metropolitan Opera debut, 1942.



FRITZ KREISLER — Distinguished violinist and composer. Made his first radio appearance at sixty-nine on "The Telephone Hour."

BLANCHE THEBOM—Lovely mezzo-soprano of the Metropolitan. Discovery followed her singing at a ship's concert while on vacation.



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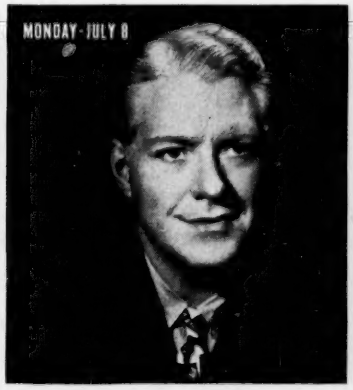

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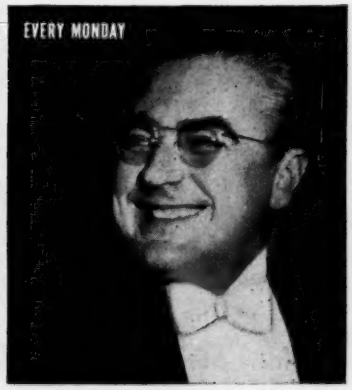

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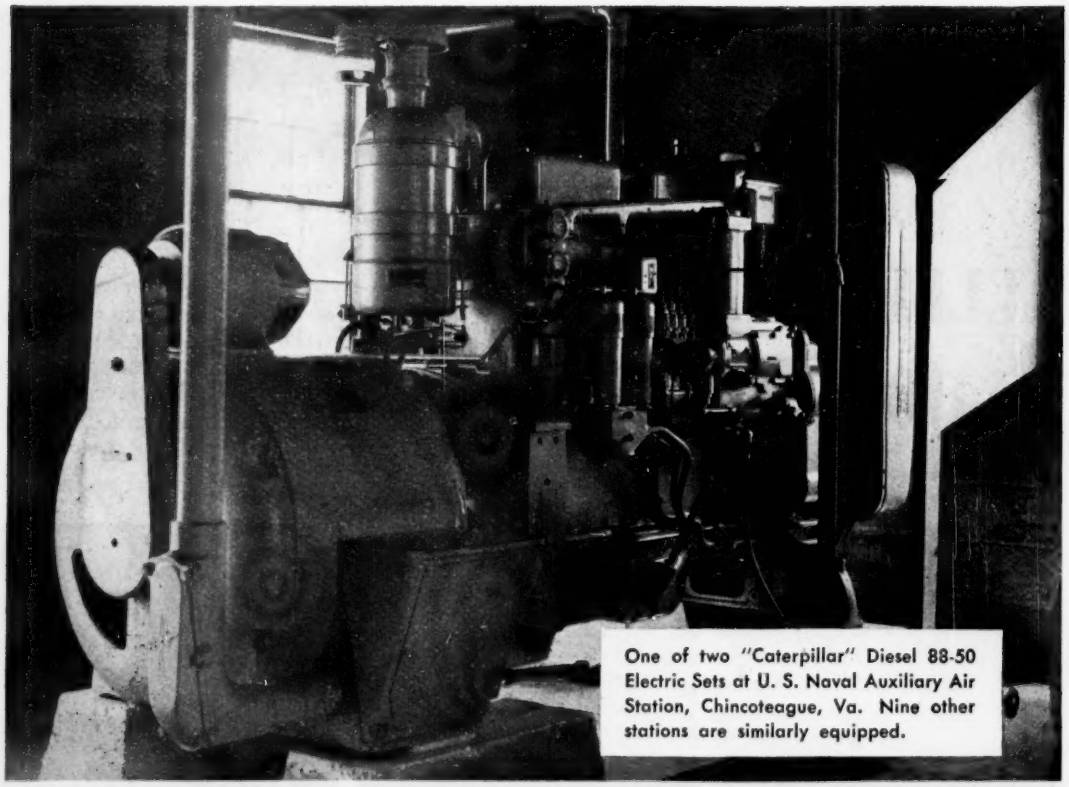

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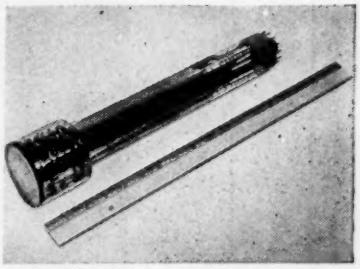

The "eye" of the camera—RCA's new image-orthicon tube which picks up the scene to be televised, multiplies its light intensity many times, thus helping to assure clear, sharp images on the television set at all times.

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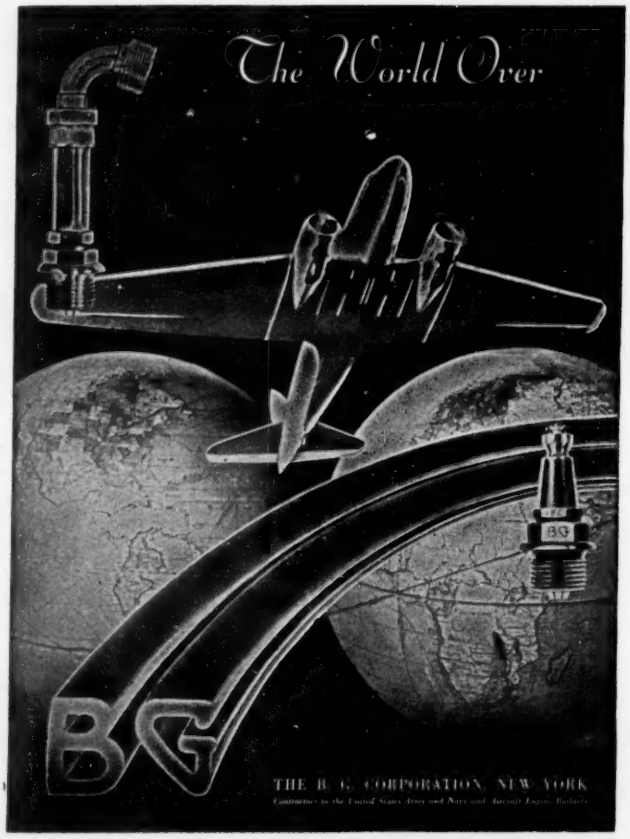

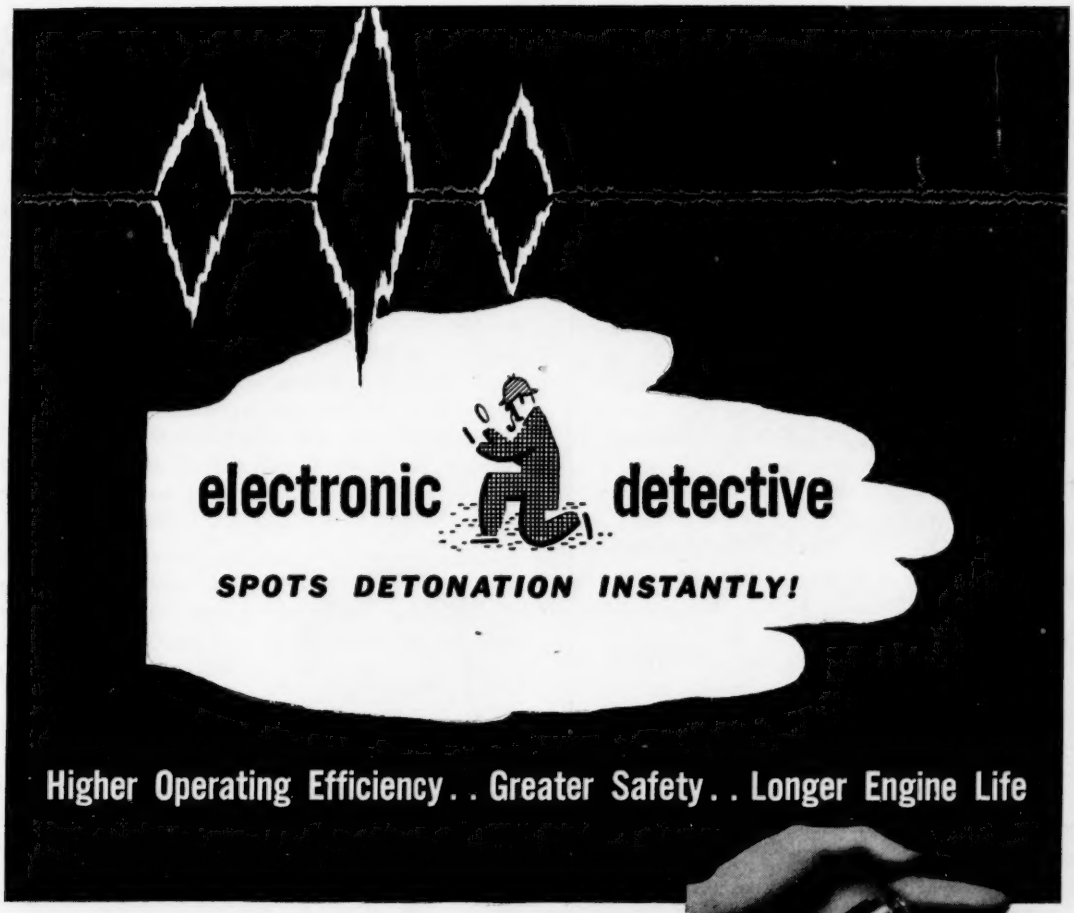

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Passing in Review

I'VE GOT MINE—Capt Richard G. Hubler, USMCR. 216 pages. New York: G. P. Putnam's Sons. $2.50

Here is a hair-raising adventure story based on the famous Choiseul Diversion in the late fall of 1943, when LtCol Victor H. Krulak and party landed at Choiseul to keep the Japs occupied while I MAC prepared to land in force at Bougainville. The fictitious counterpart of LtCol Krulak is LtCol Vaughn H. Corbett. The title *I've Got Mine* is of course a rough translation of the Corps motto *Semper Fidelis.*

Capt Hubler

Canadeau, a 45 year old sergeant and a veteran of both World Wars, is assigned the mission of rescuing Pierre Bouchard, a French planter who has been surreptitiously radioing information tion about Jap movements to the Amercians based on Guadalcanal. Col Corbett can spare Canadeau only two Marines, Burke and Biggerman, to aid in the mission. Crossing Choiseul toward the Frenchman's plantation, Canadeau's party successfully ambushes a Jap recon patrol, but Biggerman is killed while pulling out a few souvenir Jap teeth. Canadeau and Burke proceed, stumble onto a Jap working party unloading a barge, and kill all six in neat target practice fashion. From here on the action gets bloodier and bloodier.

That night a large retaliatory force of Japanese discover their bivouac, and the rest of the night is spent defending their slit trench from grenade and rifle attacks and against naked Jap scouts who keep sliding into the foxhole with gleaming knives. Toward morning, the two Americans slip away into the jungle leaving behind many dead Nips.

Later, insensible from exhaustion, the two sleeping Marines are found by Nina Bouchard. Nina is the 15-year-old daughter of Pierre and is wandering around in the uplands, wearing a rather revealing dress, and looking for some of Daddy's cows.

After a certain amount of explanation, she leads the pair to Bouchard's plantation where

Current books of interest to Marine readers

the old man is entertaining a Jap battalion commander and his exec for breakfast. Hiding the marines in a store house, Nina gets her father and they plan their escape from the island.

Knocking off the Jap major, his exec, and his sentry, they secure the charts of the mine fields guarding the approaches to Bougainville. Dropping the Frenchman's antique radio transmitter in a well after sending the vital information contained on the chart, they start the long trek through the jungle, after blowing up the plantation house.

Canadeau decides to split the party, sending the younger Burke ahead with the chart by a different, quicker route. Burke is reluctant to leave the nubile Nina, but duty is duty and away he goes.

Bouchard tells Canadeau that they are undoubtedly being tracked by *L'Etranger*, a mysterious solitary Jap sniper, who doesn't like marines because they insulted his mother some years before in Shanghai. Rumor has accredited *L'Etranger* with killing 70 marines on Tulagi and then swimming away to safety. Sure enough, *L'Etranger* is right behind them, his face a mask of insane hate. After several near misses, Canadeau copes with *L'Etranger*.

Meanwhile Burke has been captured by a platoon of Nips who begin working him over, but have not discovered the precious chart which Burke has fastened to his inner thigh with adhesive tape. Burke is rescued from a fate considerably worse than death by a platoon of Army Rangers, who have dropped in on Choiseul to lend the marines a hand.

Multi-wounded, Canadeau finds his way back to Corbett's main party, which, reinforced by the Rangers, is going to attack the main Jap camp of 2,000. The raid is preeminently successful, half the Japs are killed and the rest scattered. Corbett withdraws before they can reorganize and sets up a defense perimeter around a limited beachhead while waiting for the rescue squadron. Jap snipers keep climbing trees and shooting at them, but this is thwarted by putting girdles of fish hooks around the palm trunks.

The remaining marines and Rangers are successfully evacuated as news comes over the ship's radio that the landing at Empress Augusta Bay, Bougainville, has been highly successful, the beachhead secured with nominal losses. EHK

BASTOGNE—The First Eight Days—Col S. L. A. Marshall, GSC. 261 pages. Washington: Infantry Journal Press. $3.00.

In Bastogne—The First Eight Days Col Marshall has pieced together one of the most intricate and epic chapters in the history of World War II, one that will doubtless become a classroom classic for the military student of tomorrow. This is the story of how a single strong and determined defensive force was built from separate commands of armor, airborne infantry, and tank destroyers in absorbing the brunt of relentless enemy attacks for a period of eight days. A period in which units were rushed from one sector to another to counteract enemy penetrations and to restore the tactical integrity of their beleaguered battle position.

The author doesn't take time out to praise the heroic deeds of certain units and individuals but concerns himself mainly with the whys and wherefores behind certain command decisions and the subsequent success or failure of each. However, one cannot fail to realize, if through inference alone, the heroic deeds of the defenders of Bastogne.

In the 21 chapters based primarily on post-battle interviews, personal observations, and combat reports, there appears to be a constant effort on the part of the author to present a factual and unbiased account of the whole operation, even to the extent of revealing several instances of professional jealousy and command confusion and indecision.

To those who would like to know the story of Bastogne and its famed defenders, it is felt that Col Marshall's book should prove to be a source of highly informative reading. OKL

WORLD WAR II—A Concise History—Roger W. Shugg and Maj H. A. De Weerd. 538 pages. Washington: Infantry Journal Press. $3.00.

As the authors of this book would probably freely admit, the great histories of the past war are yet to be written. Time and generations of research alone can reduce the events of the recent cataclysm to their proper perspective. However, here is a book that presents briefly and factually the war's happenings without dubious interpretation or bias.

In chronological order each operation of the war on all fronts is presented in almost stereotyped style. Strength of opposing forces, their commanders, salient terrain features, general tactical pattern, results and casualties are ticked off in neat, unadorned fashion. It doesn't make for smooth or pleasurable reading, but it adds immeasurably to the book's value as a reference handbook.

Derived from public sources, *World War II*

WORLD WAR II

A CONCISE HISTORY

by Roger W. Shugg, A.M., Ph.D., and Major H. A. DeWeerd, Ph.D.

This book presents facts and figures, not opinions, and tells the whole story briefly. It gives as much attention to the efforts of our Allies in winning the war as well as the vital part taken by America.

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SOUL OF THE SEA

by Leonid Sobolev

A collection of 13 short stories about the Red Navy. In fiction form it traces the development of the Soviet Navy from its radical founding into the powerful weapon that surprised the Germans with its unsuspected strength.

124 **$3.00**

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Passing in Review

(Continued)

has 434 pages of text and 44 maps. There is a very detailed index and 14 appendices tabulating military and naval statistics.

Both Dr Shugg and Maj DeWeerd are sound military historians. Dr Shugg took his A.B. and Ph.D. in American History at Princeton University. He taught at both Princeton and Indiana University. In 1943 he became associated with the Military Intelligence Service of the War Department General Staff. He is now with the publishing firm, Alfred E. Knopf.

Maj De Weerd is also a professional historian. A former professor of history at Denison University, he edited *Military Affairs*, the authoritative quarterly of the American Military Institute from 1937 to 1942. At present with the Office of the Chief of Staff, Maj De Weerd served through the war years as associate editor of *The Infantry Journal*. Upon his release from active duty he will become Professor of History at the University of Missouri. He is the author of two books familiar to most military readers: *Great Soldiers of World War I* and *Great Soldiers of World War II*.

Until a superior version appears, which will hardly be in the near future, *World War II* belongs on the book shelf of every professional soldier and marine. EHK

SOUL OF THE SEA—Leonid Sobolev. 351 pages. Philadelphia: Lippincott & Co. $3.00.

Soul of the Sea is a collection of 13 short stories concerning the Red Navy. In fiction from it traces the development of the Soviet Navy from its confused revolutionary beginnings into the force that surprised the Germans with its unsuspected strength.

For the most part Sobolev's stories are raw adventure, almost "pulp" type. Characterizations are strong and interesting—and presumably accurate although sometimes enlarged to heroic proportions. Perhaps something is lost in the translation, which is by Nicholas Orloff, because *Soul of the Sea* does not read as great writing and yet it won for its author the Stalin Prize for Literature which includes a cash award of 50,000 rubles.

Firmly established now as a leading Russian literary figure, Leonid Sobolev is himself a transition character. Born the son of an Imperial Army officer, he entered the Nicholas Naval Academy at the age of 18 in 1916. Came the revolution and Sobolev deserted the old school tie to side with the Reds. He served in the Red Navy from 1919 to 1931. By this time he was a firmly established nautical writer. Re-

turning to active duty in World War II, he saw action on all sea fronts. During this last period he wrote nearly one hundred stories and sketches, some of the best of which are included in *Soul of the Sea.*

In his early stories concerning the revolution and the period immediately following it, a character, Second Navigator Yuri Shalavin is obviously autobiographic. He is presented as a gay, inconsequential mental featherweight and thus typical of all former Czarist officers who were retained in the Red Navy as specialists. They Russians abolished the term "officer" and substituted the title "commander." Each ship had its sailors' committee and its commissar who was sort of a union steward. The revolutionaries are presented as solid and sober men. Prototype is Bellosselsky, a gunner's mate in the Czar's Navy, who, as a hero of the series of stories also featuring the less admirable Shalavin, develops into a top notch gunnery officer and naval commander.

These early stories are the best. Some of the later ones are too obvious for serious consideration. Marine readers are not likely to accept too credulously "The Four Man Battalion" wherein sailors acting as marines are parachuted behind the Axis lines, where four of them virtually rout the entire Rumanian Army plus a good segment of the German.

On the whole the book is good reading if you don't mind the strong pinkish complexion.

EHK.

TOP SECRET—Ralph Ingersoll. 364 pages. New York: Harcourt, Brace & Co. $3.00

Written in a "now it can be told" vein, *Top Secret* purports to tell the inside and uncensored story of how the generals ran and won the war in Europe. Ralph Ingersoll, who started a new form of journalism when he founded *PM* in 1940, is well qualified for the task. After serving in North Africa as an engineer lieutenant—and writing the best-selling *The Battle is the Pay-Off*, he went to London in the spring of 1943 as a captain on the staff of the American Army headquarters. Serving in the strategic and tactical planning sections of various commands, he rose to the rank of lieutenant colonel and won himself the Legion of Merit.

In *Top Secret* he tells the facts as he saw them, without reservation and with scant respect for certain reputations and a great deal of admiration for others. Some of his criticism is too harsh and some of his praise is too loud, but these are expected flaws in an interpretive book of this nature. Well worth reading for the new slant that it gives on Allied staff work, a slant possible now that the "fog of battle" has partially lifted.

EHK

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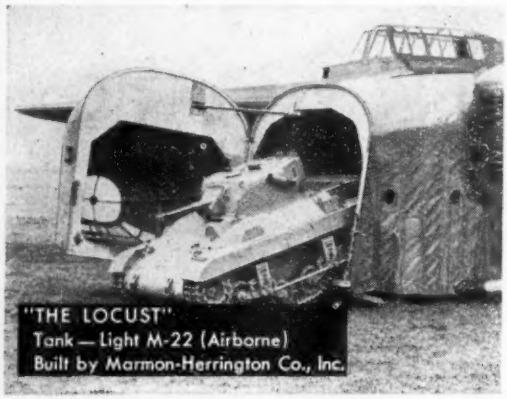

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Among Our Authors

CAPT MILES R. BROWNING, USN, will be remembered as a frequent contributor to the GAZETTE on naval subjects. Graduating from the Academy in 1917, he entered Naval Aviation in 1924 and has been a flying officer ever since. From the outbreak of the war until summer, 1943, he was Chief of Staff and aide to Admiral Halsey. From then until spring, 1944, he commanded the *Hornet*. At present Capt Browning is an instructor at the Command and General Staff School, Ft Leavenworth. See page 19.

CAPT ALFRED E. STOFFER is a former instructor on weapons unit tactics at the Basic School, Quantico. Knowing the mortar's potentialities, he regards it with affection and respect. Capt Stoffer did a four-year cruise in the Marine Corps from 1935 until 1939, came back on active duty in 1940, and was commissioned in May, 1942. He served with the 1st Bn, 8th Marines, in the Guadalcanal campaign. A native of Michigan, he attended Grand Rapids Junior College. He is now on inactive duty. See page 46.

Introducing the Author . . .

LtGen Holland McTyeire Smith

THEY now call him the "Father of Marine Amphibious Combat" and the "Old Man of the Atolls," but when he was first offered a berth in the Corps, LtGen Holland M. Smith is supposed to have said,

"What are the Marines?"

It was 1905. After two years of law practice he had grown restless and come to Washington to see about a commission in the Army. None were available, but the Marines had a vacancy in the grade of second lieutenant and the 23-year old Smith accepted the appointment.

LtGen Smith

He had been born on 20 April, 1882, in Seale, Russell County, Alabama, and had graduated from Alabama Polytechnic Institute and the University of Alabama.

Basic training for newly appointed officers in those days was at Annapolis—the Schools of Application. While there he met Ada Wilkinson of Phoenixville, Pa. Later, in 1909 he would return from the Philippines and marry her.

He served three years as second lieutenant and eight as a first, most of it in the still-restless Philippines and in Panama and Santo Domingo. He was a captain for a year, then war was declared and he was made a temporary major. A month later, June, 1917, he was on his way to France with the first contingents of the AEF.

As adjutant of the 4th Marine Brigade and later as assistant operations officer of the 1st Corps, a combined Army and Marine unit, he distinguished himself at Belleau Wood, and was at Soissons, Champagne, and St. Mihiel. Somewhere along the line he picked up the nickname "Howlin' Mad" and it has stuck. Always a hard driver and sometimes sulphurous, he remains kindly, thoughtful, and enthusiastic.

In 1920 he received the permanent rank of major, in 1930 he was promoted to lieutenant colonel, in 1934 to full colonel, and in 1939 received his first star.

A graduate of Marine Corps Field Officers' senior course and the Naval War College, BrigGen Smith in the spring of 1939 was named Assistant to the Commandant, then MajGen Thomas C. Holcomb.

BrigGen Smith was given command of the 1st Marine Brigade in September, 1939, with the mission of training 5,000 officers and men in amphibious landings. The Caribbean area was to be the testing ground with Guantanamo, Cuba, as the base.

Admiral Ernest J. King was then Atlantic Fleet Commander. Together they worked out the details of naval gunfire support, the tedious business of combat loading, the movement of troops from transport to landing craft to shore. Existing small boats were not suitable. BrigGen Smith experimented with Andrew J. Higgins of New Orleans and a landing craft was developed that could bounce in over shallow water reefs and hit the beach high. Since then "Higgins boat" has become synonymous with landing craft. Donald Roebling had designed an amphibious tractor for rescue work in the Florida Everglades—its possibilities were recognized and developed.

As war grew imminent, his role as an instructor of amphibious warfare broadened. Included in his student body were the Army's 1st and 9th Divisions. Later he brushed up the 7th Army Division before it hit Attu.

In September, 1943, MajGen Smith was given command of the V Amphibious Corps then forming in Hawaii for the drive through the Central Pacific. Within a year, the Gilberts, the Marshalls, and Saipan had fallen.

In the fall of 1944, the Fleet Marine Force, Pacific, was formed, consisting of the III and V 'Phib Corps and their supporting units with LtGen Smith in overall command. Heading the FMF, Pac, until after the war's end and redeployment, the 64-year-old Lieutenant General is now again in the United States, awaiting retirement from active service.

The Development of

AMPHIBIOUS TACTICS

in the U.S. Navy

By LtGen Holland M. Smith

FROM our entry into the war at Pearl Harbor in December 1941 until the Japanese surrender at Tokyo Bay in September 1945, every major offensive campaign launched by the United States was initiated by an amphibious assault. Our landings at North Africa in November 1942, at Sicily and Italy in July and September 1943, and at Normandy and Southern France in June and September 1944 ended in the defeat of the German armies in Western Europe by the Allied Expeditionary Force in May 1945. The Pacific offensive, which began in the South Pacific with the landings at the Solomons in August 1942 and in the Central Pacific at the Gilberts in November 1943, carried us 3,000 miles up the New Guinea-Netherlands East Indies axis for the reconquest of the Philippine Islands and 5,000 miles through the atolls and islands of the Japanese Mandates to the inner defenses of the empire in the Volcano and Ryukyu Islands. Before the Japanese surrender in September 1945, we were preparing for the final assault—an amphibious assault—and the destruction of the Japanese Army. The surrender was caused by the losses inflicted on the enemy in our amphibious offensive and by the pressure we were able to bring to bear on Japan from the naval and air bases gained in that offensive. Amphibious warfare was the primary offensive tactic in our conduct of global war.

The tactics and techniques of our landing operations represent a new and significant development in the art of war. Although military history contains many instances of landing operations conducted by both military and navy forces in all parts of the world, from the early time man first crossed the sea to wage war, the landings were generally either limited in scope and purpose or unopposed. The feasibility of amphibious raids, in which assault forces landed from the sea are withdrawn after limited operations, and of unopposed landings, relying on surprise and conducted for the purpose of subsequent military operations ashore, has long been recognized. Until the recent war, however, the effect of modern defensive weapons was considered too decisive to permit successful assault from the sea. The development of radar, aviation, coast defense guns, torpedoes, submarines, mines, defensive obstructions and obstacles, automatic weapons, highly mobile reserves, and the necessary communication facilities to coordinate and control them seemed to present insurmountable difficulties to amphibious attack.

The combined operations conducted by the British during the Dardanelles Campaign in 1915 represent the only instance prior to the second World War of an assault landing by a major force on a hostile and defended shore. The operations ashore for the seizure of the Gallipoli Peninsula were unsuccessful. The landing forces were evacuated in December and January of 1916 after an eight-month campaign, and the impracticality of opposed landings was apparently conclusively demonstrated.

In that gap of 25 years between Gallipoli and Guadalcanal, the United States developed the doctrine, organization, tactics, techniques, and equipment necessary to wage successfully this difficult and complex type of warfare. The basic principles governing amphibious tactics are, like the concept of landing operations, by no means new, nor are they peculiar to this type of warfare. Advances in the field of offensive tactics are limited largely to technical developments, new methods, and logistical skill which increase mobility and fire power; the fundamental axioms do not change. It is the actual application of well-established principles in the organization and employment of amphibious forces, armed with modern weapons and equipment, that is new.

Although military services of all nations have pondered the problems presented by landing operations, the United States Naval Service is

Beginning a series on amphibious operations by the marine who knows them best

responsible, to a major degree, for the developments currently employed. The same technical advances that were so influential in military and naval tactics have rendered the world an increasingly compact sphere. It is no coincidence that the Navy, traditionally the country's first line of defense, should have pioneered in peacetime and refined and perfected in war its foremost offensive arm. To carry out its policy of maintaining a defense in distant waters, in order to assure a theater of operations removed from the continental United States the Navy was faced with the problem of securing and defending advanced bases for the support of the fleet. The benefits of a well-rounded, flexible fleet organization including an organic auxiliary air arm and a fleet marine force to exploit the advantages of sea power with landing operations have been more than realized in the solution of this problem. From beginnings in landings which were in concept auxiliary naval actions, the Navy has developed and practiced large scale joint amphibious operations, which are purely offensive in nature. Tactics governing an opposed landing for the seizure of a small advanced base to facilitate or exploit a naval campaign are equally valid for undertakings of greater magnitude, incident to invasion and extensive land warfare. The basic problems are constant, regardless of the scope, purpose, or varying local conditions which may obtain in any given operation.

LtGen Smith *has expressly requested that full credit be given to the former* ***Lt Bill Lowe*** *for his research and editorial assistance during the preparation of* Amphibious Tactics. ***Mr. Lowe*** *is now with* World Report, *Washington, D. C.*

The Coordinated Attack

Any landing operation directly related with combat, in which the forces participating operate both in the water and on the shore, must be termed amphibious and tactical. It may be a simple river crossing, conducted merely in the presence of the enemy and in anticipation of a battle soon to be joined. However, in its most literal and modern connotation, *amphibious tactics,* as conceived and practiced by the Navy and as discussed herein, means *the art of conducting an operation involving the coordinated employment of military and naval forces dispatched by sea for an assault landing on a hostile shore.*

The most significant words in the foregoing definition are "coordinated" and "assault." In them is the key to the development of modern amphibious tactics. It was the recognition that a landing operation, a combined undertaking of great complexity, must be carefully coordinated in planning and in execution, and that the landing of troops on a hostile shore must be accomplished as a tactical movement, including an approach, deployment, and assault by the landing force following an adequate preparatory bombardment and accompanied by the effective supporting fires of surface and air forces, that gave the impetus to the development of successful tactics.

The idea of a combination of arms in order to apply the maximum effective force against the enemy at the right place and at the right time is one that precedes our landing operations doctrine by over a hundred years. Late in the 18th century there was developed the concept of a corps of all arms, which gave to ground forces a new flexibility and power. The effect of co-ordination of associated and supporting arms increased through the years with the invention of new material, and its application to modern weapons, such as the tank and airplane, has been facilitated by concurrent advances in the field of communications. Swift application, coordination and control of military force is made possible only by reliable communications. The effective employment of coordination in relation to modern offensive weapons in land warfare was most clearly demonstrated by the German airtank-infantry blitzkrieg techniques unveiled in the offensives in Poland and France in 1939 and 1940. Its application to naval tactics is best exemplified by the strikes of the battleships, aircraft carriers, cruisers, and destroyers of the powerful fast carrier task force of the U.S. Pacific Fleet. The highest and most inclusive degree of coordination yet achieved has been applied in the joint amphibious offensives which have featured our major campaigns during the war, wherein the Army and the Navy have together so successfully employed their surface, air and submarine forces in mutual support and coordinated mass. Here, in the realization of the full implications of combination, cooperation, and coordination, lies amphibious warfare's most lasting and significant contribution to military science.

Military and naval mobilization, organization, administration, logistics, planning, training, movement and deployment are all directed to one end—combat. Combat is the means of achieving war's end. It was only when the naval phase of our amphibious operations—the seaborne approach and the ship-to-shore or shore-to-shore movements—was visualized, not as a ferry ride, but as a tactical movement, culminating in an assault, that successful landing operations were possible. Only when reliance on

tactical surprise and stratagem, and the hope for favorable conditions were abandoned, and the problem of effecting a frontal assault on a defended shoreline was squarely faced, were adequate solutions evolved. Planning for the worst and the consideration of all eventualities resulted in the development of weapons, equipment and techniques to meet them. The concept of assault is therefore elemental. In amphibious tactics, whether the battle is for an island base or an invasion beachhead, it is the assault landing and the subsequent operations of the landing force to which all activities and the support of all participating forces are directed. The mission of the landing force is the primary tactical consideration.

All warfare is concerned with certain general principles. The factors of superiority, concentration, and economy of force, surprise, speed, offensive spirit, mobility, and simplicity are characteristic of successful offensive action and have their special application to landing operations.

Superiority of force is a prerequisite of amphibious assault. A condition of sea and air supremacy or decisive superiority must exist at the objective area and in the approaches thereto before a landing attempt is justified. The superiority must be exercised once the landing is begun to prevent enemy intervention or reinforcement and to provide reconnaissance, observation, and tactical support. The task of securing complete or even adequate intelligence, which in landing operations must include detailed data on terrain, hydrography, and meteorology as well as information on enemy strength and disposition, combines with the logistic problems of transport and support, frequently over extended sea lines of communications, to make the organization of an amphibious attack force peculiarly difficult. Superiority must be achieved in accurate fire power, planning, training, organization, and aggressive mobility rather than in numbers. It is the coordinated *concentration of* the resulting *force* that provides the superiority. The logistical problems of transport and supply and the requirements of speed and mobility render *economy of force* mandatory.

The mobility of sea-borne forces and the resulting ability to approach under cover of darkness and to conduct diversionary feints tends to increase their opportunity for tactical *surprise*. However, in any operation in which the enemy defenses require a prolonged preparatory bombardment the factor of surprise is sacrificed for the more certain advantages of destruction and neutralization achieved by bombardment.

"For the victor, the engagement can never be decided too quickly; for the vanquished, it can never last too long. The speedy victory is a higher degree of victory; a late decision is on the side of the defeated some compensation for the loss."[1] From the time an amphibious attack is launched, speed is essential—speed in debarkation in the transport area, speed in the vulnerable period of the ship-to-shore movement, speed in the initial seizure of a beachhead, speed in landing tanks, artillery and other supporting arms, equipment, supplies and reinforcing troops, speed in the expansion of the beachhead and in the capture or construction of airfields, and speed in the pursuit and destruction of the enemy. A prerequisite of speed is *offensive spirit*. The decisive measure of superiority in the more difficult amphibious operations of the war had been frequently provided by the relentless aggressive spirit of the troops in maintaining a constant pressure on the enemy, denying him the ability to move, communicate or reorganize. The importance of constant offensive action in the apparent chaos of an opposed landing and the necessity for resourceful, dynamic leadership in all echelons can not be over-emphasized. "Therefore, the more lively the attacks are, the less men they cost. By making your battle short, you will deprive it of the time, so to speak, to rob you of many men. The soldier who is led by you in this manner will gain confidence in you and expose himself gladly to all dangers."[2]

The opportunity to choose the route of approach and move rapidly to any chosen objective and the immediate availability of mobile reserves for exploitation is greater for sea-borne than for land-based troops. The development of assault transports, troop-carrying destroyers, fast landing craft and other special equipment has all been directed at achieving increased *mobility*.

The complex and variable nature of landing operations requires comprehensive and flexible planning. The execution of plans by the many diversified component parts of a joint amphibious force in a coordinated and effective manner requires a *simple* scheme.

A joint operation may be one in which military and naval forces perform consecutive and distinct missions, in which coordination is a simple matter of timing, in which there is a sharp delineation between the phases of army and navy participation. Such undertakings may be termed cooperative. There is, however, in an amphibious operation a critical middle phase, during which the naval and military forces function simultaneously and in combination. Prior to the landing and then after the troops are established ashore. the functions of the naval forces and of the troops are, for the most part characterized by their normal distinct naval and military tasks. It is the interim period that is the province of amphibious tactics. Here there is the

[1]Von Clausewitz.
[2]Frederick the Great.

combination of military and naval tactics, the mutual adjustment of respective techniques. The "task force" (whether it be an amphibious corps, reinforced division landing force, regimental combat team or battalion landing team) organized after the naval manner with regard to the mission assigned and the limitations of logistics, controlled through the medium of naval communications, executes a military tactical movement from ship or shore-to-shore. With a base of fire from naval vessels and aircraft, delivering the preparatory barrage against the landing areas and covering bombardment on the flanks and into the enemy's rear, troops embarked in naval landing craft approach rapidly in column, deploy when within range of hostile small arms fire, and assault the beach simultaneously and on a broad front. There follows the pursuit and continuation of the attack, closely supported by naval elements until the beachhead is established and the landing force, augmented with arms, reserves, and supplies, becomes self-sufficient. In the landing phase command is decentralized, and initial operations ashore are directed toward a resumption of centralized control by the landing force commander. The success of the maneuver, therefore, relies largely on the efficacy of the communications afloat and between ship and shore.

Amphibious tactics are confronted with certain special problems which must be solved before the essential elements of mobility, fire superiority, control, and logistical support can be achieved. Doctrine, technical development, and practical experience have provided the solutions. The current naval doctrine on landing operations, which was published prior to our first landings in 1942 and without benefit of the combat experience of this war, was based on long consideration of the problems and the limited experience gained in maneuvers. It has proved remarkably sound. The organization, planning, tactics, and techniques prescribed provide largely satisfactory answers. The doctrinal solutions have been revised and improved as technical developments have met the demands of tactical requirements.

Technical advances have been expedited by the research and experimental agencies established by the Army and Navy. Notable among these are the Office of Scientific Research and Development of the National Defense Research Committee, the Naval Research Laboratory and the Navy Department's newly established Office of Research and Invention, the Research and Development Division of Headquarters, Army Service Forces, War Department, the Army Engineer Board, the Marine Corps Equipment Board, and the Joint Army-Navy Experimental and Testing Board. Finally, tactics have been refined and perfected in the light of lessons learned in maneuvers and actual combat operations.

The problem of achieving mobility in landing operations involves the following:

1. The development of assault transport vessels and landing ships for personnel and cargo.
2. The organization of transports into divisions and squadrons with regard to naval control afloat and employment of the battalions, regiments, and divisions embarked.
3. The organization and equipping of a landing force for embarkation in naval vessels and for decentralized tactical employment in landing.
4. The development of a technique for loading troops and equipment on transports in a manner to facilitate rapid debarkation in accordance with the tactical scheme of maneuver of the landing force.
5. The development of a technique for the rapid transfer of troops and equipment from transports into landing craft.
6. The development of rapid, maneuverable, shallow draft landing craft to transport assault troops and equipment through surf and enemy fire and over reefs to the beach.
7. The development of organization, equipment, and technique to control landing craft in the ship-to-shore movement in order to facilitate the continuous flow of troops, arms, and supplies to the beach in accordance with tactical requirements.
8. The development of methods for breaching and passing underwater obstacles and obstructions.

The problem of providing fire superiority in an amphibious operation involves the following:

1. Providing the landing force with supporting weapons during the period when its organic artillery and land-based tactical air support are unavailable.
2. The development of a technique for shore bombardment by naval guns. This includes adapting high velocity, flat trajectory, penetrating ordnance to missions calling for high trajectory, high explosives of wide bursting radius and the development of a technique for indirect fire control.
3. The maintenance of air superiority at the objective area and the provision of close air support. This requires mobile bases and methods for rapid, controlled, accurate support.
4. The development of equipment and methods for the early landing of tanks, artillery, land-based aircraft, supplies and equipment.
5. A technique for the coordination of air, naval gun fire, and artillery support.

The problem of control in amphibious operations is one of command, liaison, and communication, and training. This involves:

The Big Three of Marine Amphibious Combat; from left to right, LtGen Holland M. Smith, Gen A. A. Vandegrift, and LtGen Roy S. Geiger. Gen Vandegrift led the 1st MarDiv and 1 MAC in the Solomons in the opening campaigns of the Pacific offensive, then became Commandant. LtGen Smith took the V 'Phib Corps to Tarawa, Eniwetok, and Saipan, became Commanding General, Fleet Marine Force, Pacific. LtGen Geiger commanded the III 'Phib Corps at Guam, Peleliu, and Okinawa, succeeded LtGen Smith as CG, FMF, Pac.

1. The establishment of command relations which will best facilitate coordination in the planning phase and the uninterrupted application of combined force in the execution of the landing.

2. The development of equipment and methods for accurate, rapid, and secure communication between all elements. All major commanders must be constantly informed of the existing tactical situation in order to direct and coordinate their respective forces most effectively.

3. Provisions for realistic, full-scale joint training, which with experience is the only method for achieving that full measure of coordination necessary to success.

The problem of logistical support entails detailed planning and cooperative execution of the plans by both naval and military forces. It requires:

1. Long shipping lanes which must be protected from enemy surface, air or undersea attacks.

2. Special types of ships designed to carry and put ashore supplies or a combination of troops and supplies.

3. A system of combat or vertical loading whereby any given item aboard the supply ships can be reached quickly.

4. The organization and employment of a special supply agency, the Shore Party, to insure the flow of supplies and equipment from small boats or amphibious vehicles to the beach and thence to the fighting troops.

The situation, problems, and therefore the tactics employed in military operations vary with the mission assigned. There are three major types of missions in amphibious warfare, each of which has its peculiar characteristics:

1. There is the capture and occupation of an advanced naval or air base to facilitate or exploit a naval campaign. The Pacific offensive of the war was such a battle for bases. Operations of this nature are of paramount interest to the Navy. Generally, there are limited land masses involved—islands or atolls. There is frequently the presence of a fringing reef and the resulting problem of traversing it. In such restricted areas, there is no requirement for an armored force and little need for massed heavy artillery. The available land area can be

isolated by the exercise of sea and air superiority. The enemy can thereby be prevented from reinforcing his defending forces. His movement can be restricted, and his ability to employ mobile reserves is diminished. The attacker will probably encounter occupied defensive positions at the shoreline. The necessity for tactical surprise is therefore less essential. The movement to the objective from mounting and staging areas is generally a long one which increases the logistical burden. Land-based tactical air support may accordingly not be available before airfields are captured or built, and there is a greater need for carrier-based air at the target. Conversely, and because of the primarily naval character of the campaign, there is generally a larger number of bombardment vessels available. Daylight operations are consequently preferable to night landings.

2. On the other hand, there is the seizure of an invasion beachhead to facilitate a major land campaign. The opening phases of the North African, Italian, and Western European campaigns of the war are examples of battles for beachheads. The Army had the paramount interest in these undertakings. Extensive land areas with long, and frequently lightly defended, shorelines afford the enemy the opportunity to employ mobile reserves. The factor of surprise is therefore more important. The attacker requires armor and motor transportation to give him the necessary mobility. He has a greater need for quantities of heavy artillery and can employ parachute and airborne troops to good advantage. There is a greater necessity for tactical air power for reconnaissance, observation, and attack missions. The movement to the objective is generally shorter and can therefore be accomplished to a partial or complete extent as a shore-to-shore operation. The proximity of mounting areas and friendly supporting bases and the primarily military character of the operation places the emphasis in supporting bombardment on tactical aviation rather than on naval gun fire. The characteristics of an invasion landing apply with modifications to river crossings.

3. The third type of mission can be classified as a raid and includes those landing operations of limited scope which are conducted for purposes of reconnaissance, harassing the enemy, diversion, or sabotage. They require above all else surprise and speed of execution and involve carefully timed and coordinated action, culminating in a withdrawal of the attacking force. Night landings are preferred to daylight operations. Special and widely varying techniques, organization and equipment are employed in operations of this nature, but as in the case of all three types of missions, they are based on the fundamental principles of amphibious tactics. British Commando operations in Europe and the landings of United States Marines at Makin and Choiseul are examples of amphibious raids.

(To be continued)

Postwar Mountain Training

MOUNTAIN training includes specialized techniques, but principally it requires the ability to overcome obstacles. Our troops should be trained in the mountains during training periods. The mountains should not be reserved for specialized, elite troops, but must be a part of each infantry division's unit training, which should include combined maneuvers. The value to the unit is threefold.

First, maneuvers in rugged terrain with a limited or non-existent road net more nearly approach battlefield realism. Where bullets or flags fail to halt the unnaturally rapid movement on normal maneuvers, the difficulties of fighting the terrain and the difficulties of supply, control the action in a mountain field exercise.

Second, the commander has an opportunity to judge his subordinates' ability to accomplish a difficult task.

Third, the individual soldier has learned to fight as a doughboy. He learned that the infantryman is not a streamlined, modernized, truck riding soldier that the news magazines picture, but that even today the foot soldier must pack his weapon, his ammunition, his rations, and his bedding, just as Stonewall Jackson's foot cavalry did eighty years ago.

—Military Review

Spearhead -- THE FAST CARRIER FORCE

By Capt Miles R. Browning, USN

FAST carrier task force operations were a most spectacular and effective feature of the last two years of our warfare in the Pacific. In a period of less than twelve months, these forces pushed the front lines of the conflict to the shores of Japan and Asia and secured air and sea mastery over some ten million square miles of the Pacific ocean.

The composition of these forces, and the tactics which they employed, marked the "coming of age" of a technique which had been born but 15 years before. In 1930 and '31, the recently completed U. S. carriers *Saratoga* and *Lexington (1)* were operated in much the same manner in exercise maneuvers to test the defenses of the Panama Canal. The scheme of maneuver was, essentially, to make a high speed run in toward the target under cover of darkness or low visibility and to strike with full force from a selected launching point, some fifty to one hundred fifty miles out, at the earliest minute that light and weather would permit. This tactic achieved immediate and startling success. Every annual joint maneuver thereafter continued its development and refinement, from both the offensive and the defensive standpoint. No successful counter to it by shore based forces was found during the years prior to Pearl Harbor. In the last of those peace time games played along the coasts of the continental United States, in January, 1940, the aircraft from two carriers off San Francisco completely emasculated the "enemy" shore based air strength concentrated between Los Angeles and the Oregon border and spearheaded a successful "invasion" off the west coast. Their accomplishment was topped off by catching and (theoretically) destroying an entire group of Fortresses on the field at Reno, Nevada, shortly after dawn on the second day of the attack. That particular war game was the last of our large scale plays on the mainland, as the fleet moved to Hawaii in April and did not return.

During '40 and '41 similar exercises in the Hawaiian area added to the evidence already accumulated to indicate that such attacks could never be completely stopped; however, there was still much difference of opinion on this point until 7 December, 1941, when the Japanese attack took the controversy out of the laboratory class. The Pearl Harbor strike was delivered by a fast carrier task force which followed precisely the tactical pattern which we had originated a decade before. Japan knifed us with our own invention.

1942 witnessed the sea battles of the Coral Sea, Midway and Santa Cruz. Carrier losses in both the U. S. and Jap fleets were such in these actions that neither side could assemble and risk a major carrier task force for over a year thereafter. By the end of 1943, however, the American *Essex* and *Independence* classes were beginning to appear in numbers in the Pacific, while Japan had, as yet, only partially rebuilt her battered carrier strength. The advantage now lay heavily with the United States. Not only was she stronger in fast carriers than her enemy, but also she was at long last on the offensive, while the Empire had been forced into a defensive war. The significant point here lies in the fact that fast carrier task forces *must* employ bold tactics if they are to realize their full potential—and bold tactics do not consort well with defensive strategy. Now it was our turn to wield the knife.

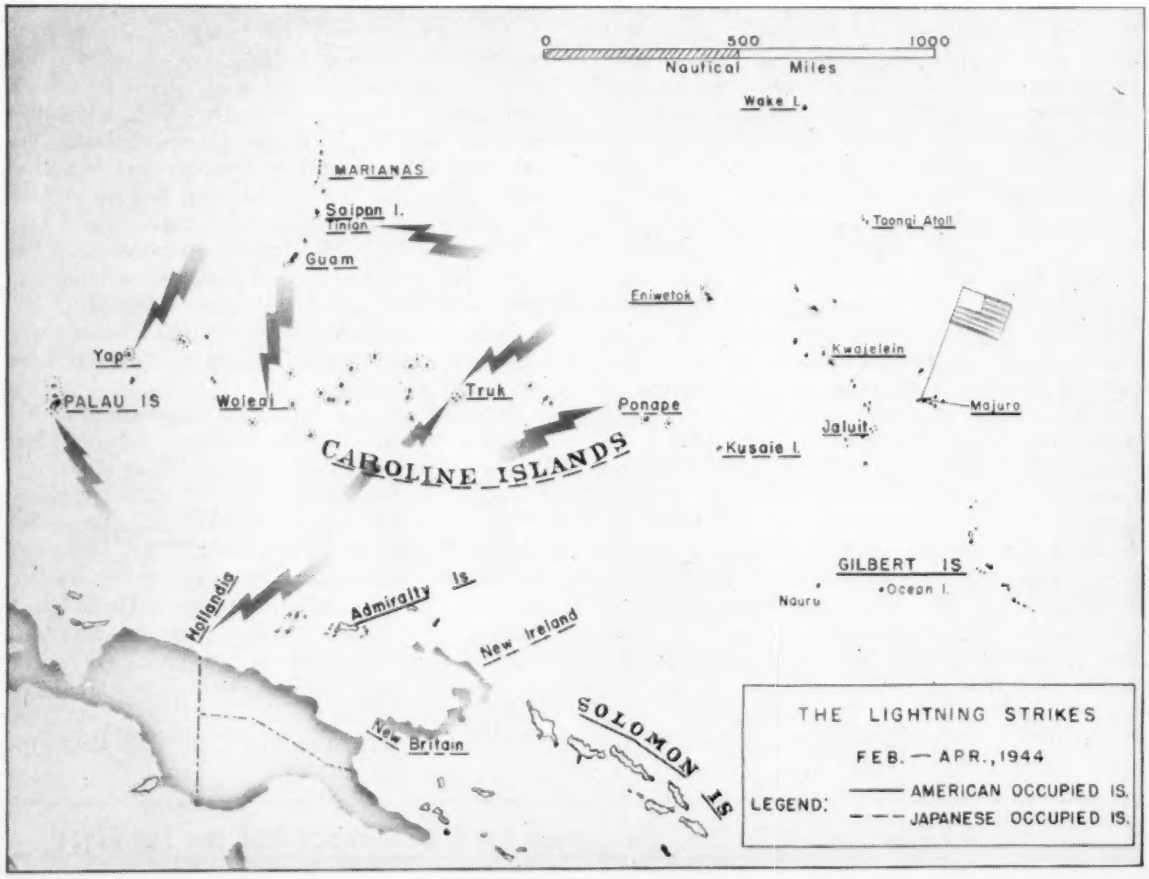
Our first move was to seize adequate and protected anchorages in the Marshall Islands. For this purpose, we took Majuro, Kwajelein and Eniwetok in February, 1944. Of these, Majuro, in particular, provided a superb and secure haven for basing the fast-growing fleet including the famous Task Force 58. The raiding sweeps which isolated the Japanese bases at Truk, Jaluit, Ponape, and, later, Wake, Marcus and the Mariannas, commenced at once. Captured Eniwetok was still burning when Task Force 58 struck and neutralized the enemy "Gibraltar" at Truk. After a thorough pounding of the base there, the

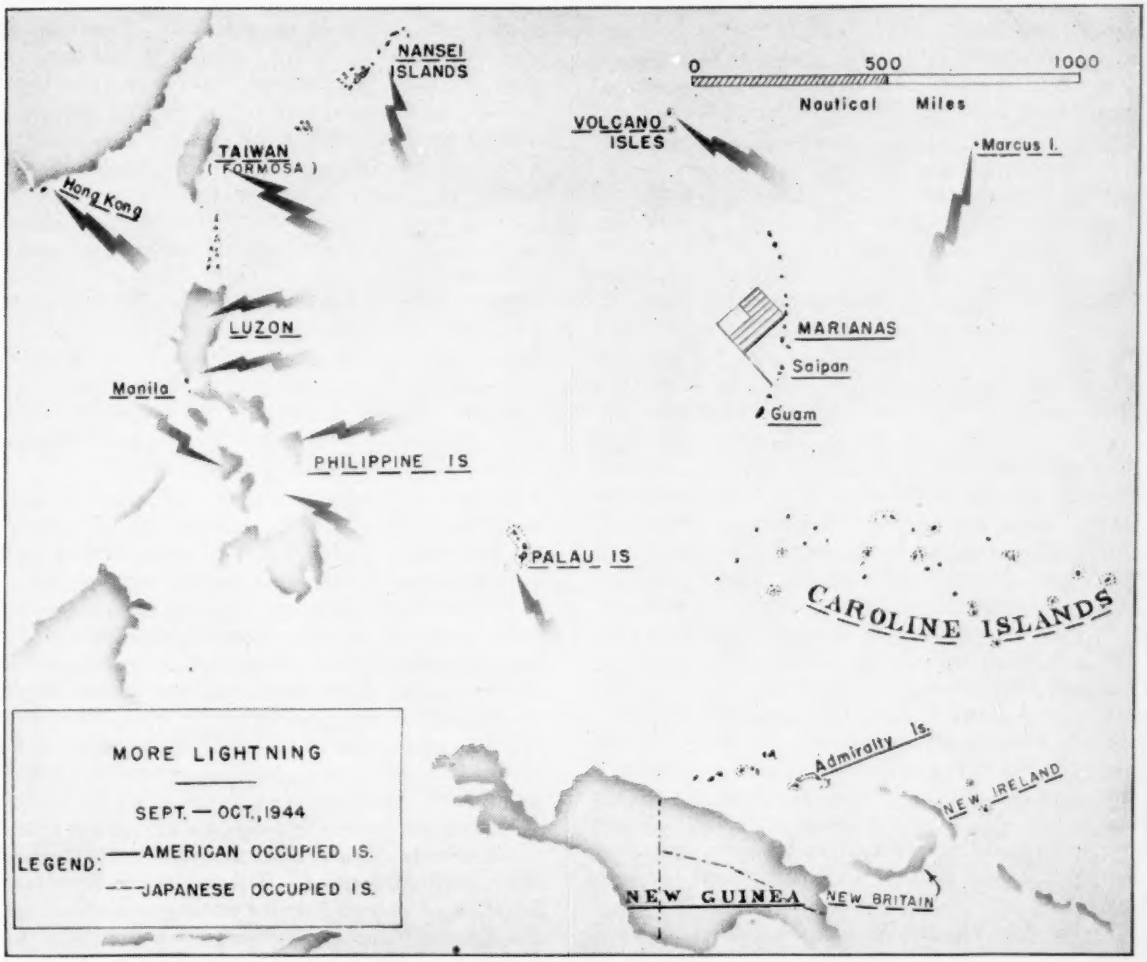
Shipborne naval aircraft packed the punch needed to knock out the Jap Fleet

force continued westward to Saipan and the Marianas where it operated for several days against Japanese shipping and installations. This, the first of many ensuing penetrations deep into enemy waters, outlined clearly the pattern of events to come. Returned from this sortie, the task force reserviced at Majuro and departed for the next strike. This was made at the major enemy base in the Palaus; the attack was delivered on 30 and 31 March, and encountered practically no resistance. Retiring eastward toward Majuro again, the force made strikes on Yap and Woleai—minor Jap bases in the western Carolines. There was no resistance. In less than two months a fast carrier task force had seized mastery of the sea and air in an enemy area of over two million square miles, studded with hostile fleet and air bases! There is no comparable achievement in the history of warfare.

The March, 1944, raid on the Palaus was followed by a week-long sweep along the New Guinea coast in April in support of the MacArthur jump into Hollandia. This operation completed the amputation from home support of Rabaul and the entire Japanese position in Melanesia. Returning to Majuro, the carrier task force gave Truk and Ponape another going over. Every bloom on the severed Japanese vine of the south and central Pacific was withered and dying rapidly.

The U. S. mastery of the mandated islands area was by now so complete and unchallenged that new carriers reporting to the fleet were sent on "training" strikes against Wake, Marcus and other enemy positions which, a few months earlier, had been potent and much respected strongpoints. Meanwhile, during May, 1944, preparations went ahead rapidly for the next westward step. This was to be the physical seizure of the Marianas, themselves, and the establishment of main U. S. bases in Guam and Saipan. The seat of the entire campaign was thus to be moved 1,500 miles in one gigantic stride. The operations commenced in June and culminated in the fall of Saipan, Tinian and Guam in July and August. They were marked by the first serious challenge to our sea advance which the Japanese had offered since the fateful night battles off Guadalcanal in November, 1942. This challenge died in the fleet action of 19 June, 1944, in which the enemy suffered disastrous losses. The remnants of the Jap fleet withdrew in a rout, leaving our carrier task force in undisputed possession of the entire sea area while permitting the campaign for capture





of the islands to proceed without outside interruption.

Guam and Saipan secured, the fleet base moved west at once. The carrier task force promptly extended its sway over ocean and air, westward to the shores of the Philippines. We had moved so swiftly and successfully that the Joint Chiefs of Staff decided to anticipate by two months the previously determined date for the joint assault on Leyte. The carrier force accordingly went to work on the enemy air and surface positions in the northern Philippine Islands, preparing the way for MacArthur's troops in October. Here, in the first days of that invasion, the Jap made his last desperate effort to stop the tidal wave—and sacrificed what fleet and carrier strength he had left, in so doing. From that time on, our fast carrier forces roamed at will as far west as the China coast and as far north as Hokkaido.

Our carrier task forces were the direct agency which enabled us to advance the front lines in the Pacific a distance of some 3000 miles in less than one year. The operations of the force were not merely a demonstration of the fact that land-based air power cannot hope to completely stop such carrier attacks; that had already been proven over and over again. The force operated for days and weeks within constant easy range of enemy air attack and in positions known to the Jap, striking repeatedly at targets which were first precisely located and then just as precisely destroyed or neutralized. The force took all that the Japanese had to give in the way of counter-attack; took it, beat it down, and continued on its schedule of predetermined strikes. The operations proved that not only is land-based air power, alone, unable to stop such attack because of the surprise element, but that, furthermore, such air power is relatively impotent against it, even long after all surprise has ended. They proved that carrier air power, properly employed, embodies within itself an even greater range and mobility than that of what land air calls "strategic" air power, *plus* all the precise destructive potency of so-called "tactical" air power. The fast carrier task force is the only weapon in existence which provides this combination in unified form.

The concept of the fast carrier task force

flows directly from the basic principle of combat organization as practiced in the U. S. Fleet. It is a fundamental of that principle that tactical command shall be vested in the commander of that major component of the fleet which is "carrying the ball" at the moment. All other components pursue supporting roles in the action; but the task organization *and the disposition* of component parts (ships) must both be such that instantaneous shifts in command and deployment can be made to accommodate a sudden change in the tactical situation. Task Force 58 and, later, its counterpart in the Third Fleet, Task Force 38, were organized accordingly. Both Task Forces were, in fact, the combatant 5th and 3rd Fleets in practically full strength. While operating as 58 or 38, the battleships, cruisers and destroyers present were so disposed relative to the carriers as to provide maximum support and assistance to the latter in their ball-carrying activities. In the event that enemy surface ship strength put in an appearance, and a fleet surface action threatened or actually developed, the carriers at once yielded their primary role to the heavy surface ships; the disposition shifted to the deployment of "battle-line" and flank forces, and tactical command of the whole passed instantly from the carrier flag officer to the battleship flag officer. Necessity for making this shift seldom arose in the Pacific, for the Japanese were extremely averse to surface matches after Guadalcanal; but Task Forces 58 and 38 had to be prepared for it at all times.

With this organizational background in mind, the pattern of our carrier sweeps becomes a simple and logical one. A typical operation might find the following ships in the force: 10 *Essex* class carriers, six *Independence* class carriers, eight battleships, 20 cruisers, 72 destroyers. These would be organized into several "task groups". Each such group would be under command of a flag officer who was an aviator and who was embarked in one of the carriers of his group. Thus, the average *group* strength might be four carriers, two battleships, five cruisers and 18 destroyers. The carrier task *force* commander would also be an aviation admiral embarked in a carrier of one of the groups, but he did not interfere in the tactical handling of that group by its group commander. He exercised over-all tactical command of the several groups of the force. The battleships, cruisers and destroyers of each group, and of the force as a whole, were under command of their respective flag officers embarked in them, but these officers exercised command subordinate to the force and group commanders, functioning as *type* commanders only, so long as the force was functioning as a *carrier* force. Also, the fleet commander, himself, was customarily embarked in one of the battleships of the force, but he left tactical command strictly alone unless necessity arose for him to assume it and commit the force as a fleet, rather than as a carrier force.

The entire force cruised, normally, with the several groups retaining their tactical autonomy within the limits imposed by the orders of the force commander as to speed of advance, direction of movement, state of readiness for action, etc. Usually, each group occupied a small enough surface, so that the outlying ships of adjacent groups were in easy visual and radar contact. This was of particular importance for facilitating visual and high frequency radio communication. The force, when so concentrated, covered a rough rectangle. All emergency maneuvering was controlled by high frequency voice radio, employing a simple code.

Within each task group, the individual vessels were disposed about the carriers in the center, the battleships and cruisers in a position to provide a strong all-round defensive ring of heavy antiaircraft fire power. Beyond them, on the outer circle at equally spaced points around it, were the destroyers, far enough to minimize the danger to the destroyers from the 40mm fire of the big ships, and, at the same time, to enable them to perform their additional function as an anti-submarine screen. When one or more task groups left the immediate vicinity of the others, destroyer *pickets* were placed at maximum visual (and radar) range beyond the outer circle of the group disposition. These pickets were very effective in locating and assisting to destroy Jap low-flying "snooper" planes and sea level attacks.

During the overseas movement of the force toward the target objectives, training exercises in gunnery, air operations, and repelling simulated enemy strikes, were conducted constantly. In addition, combat, anti-submarine, and anti-snooper air patrols were maintained over and around each group at all times. When major air operations were in progress, however, and always when strikes were being made against the hostile objective, the entire task group was maneuvered as a unit by the group commander to insure that maximum integrity and screening fire power were maintained around the carriers. In such operations, all carriers launched and recovered aircraft simultaneously on a schedule issued by the task group commander to reduce lost motion to a minimum.

The defensive organization within the task group—and within the entire force when it was concentrated—was worked out in great detail. Responsibility for fighter direction was rotated among the carriers. All ships were required to monitor fighter direction circuits, however, and the direction of an interception was frequently passed to another ship if difficulty was

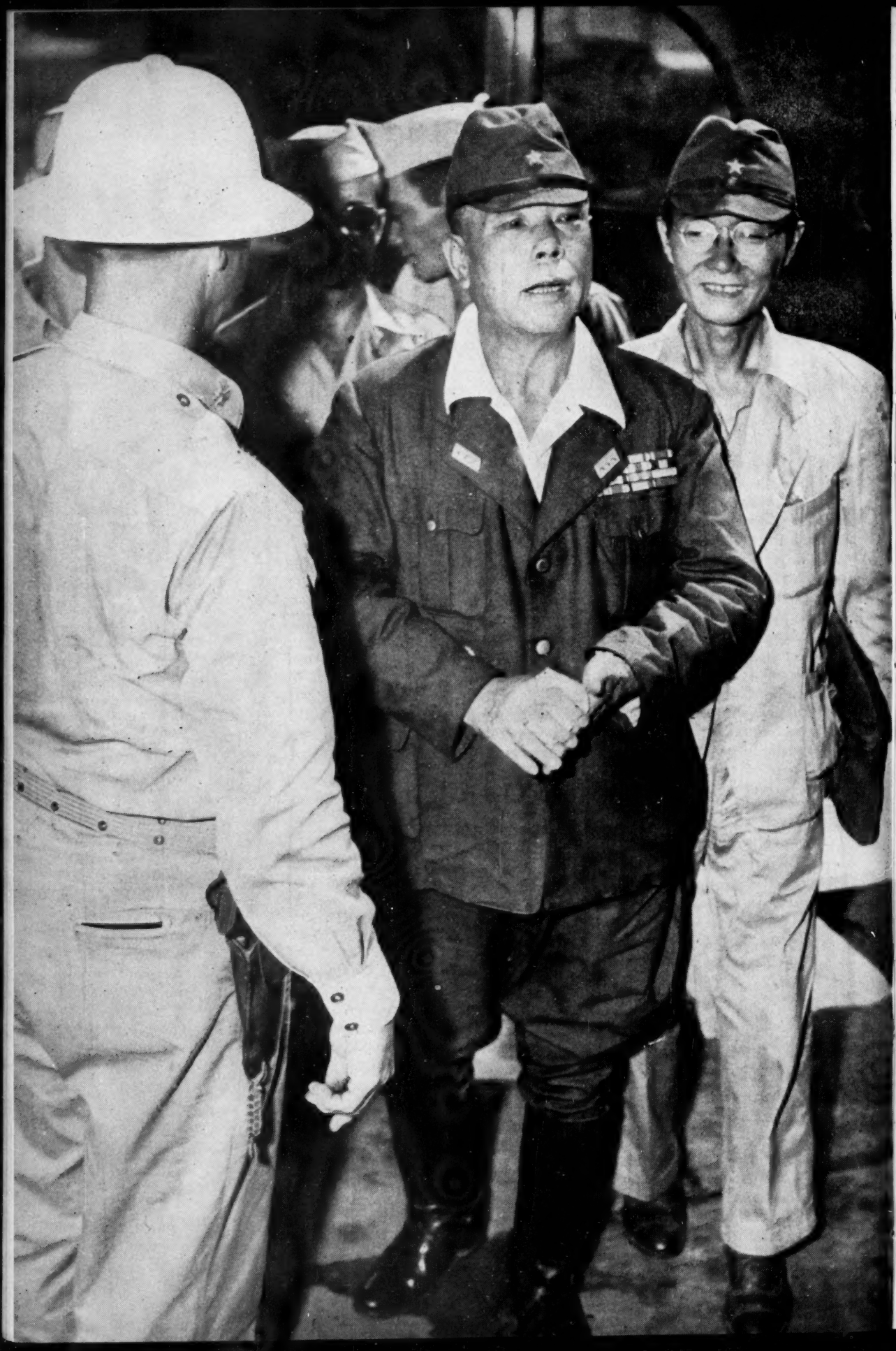
The indestructible *USS Enterprise* was "sunk" six times by the Japanese Navy.

being encountered by the "guard" vessel. When under multiple attack, if the volume of fighter direction traffic was heavy, the load would be distributed by the task group commander. Search radar guard was likewise precisely distributed at all times and for each of the many special search equipments carried by the ships of the disposition. Similarly, the challenge and identification duty was specifically assigned and rotated. Close control of the antiair gunfire of every vessel in the group was carried out in accordance with clear cut "SOP" issued by the group commander. For example, carriers were not normally permitted to use 5-inch fire against low-flying attack except as an extreme measure of self-preservation; a necessary measure to prevent "shooting up" friendly ships. Individual ships were authorized to maneuver radically and independently within the disposition when under attack, subject to the general rule that collision risk must be minimized. Adjacent ships were required to give way under the same proviso, to afford sea room to a ship in trouble.

On the offensive side, one of the vital developments in carrier technique which emerged from the Pacific war was the so-called "deck load" strike, in which only half of the ship's air group was launched at a time. It was found that the over-all tempo of sorties from a carrier could be stepped up markedly by this means. Pre-war practice had been to launch the entire air group at once—with the result that a very large part of the fuel and endurance of the planes was consumed by the protracted operation of, first, getting them all in the air and, second, recovering them upon their return. Another drawback of the practice, and fully as serious as the one already mentioned, was the slow-up in the difficult task of reservicing and rearming for subsequent strikes, and in the "re-spot" of the group for the next launch. With every usable foot of her flight deck and hangar jammed by her full complement of planes, there is little flexibility possible in a carrier's air operations, and any delay or interruption is multiplied a hundredfold. The "deck load" technique was developed to overcome these handicaps. From the outset, it brought tremendous increase in flexibility and effectiveness. Employing it, a normal daily volume of sorties equivalent to three missions by every aircraft in the ship can be maintained with ease by each carrier. With deck load procedure, a carrier task force such as the typical 58 described would enter an action with an initial strike potential of over 3300 sorties daily.

Fuel, airplanes and flight crews were replenished in the ships of the task force without the necessity for their steaming thousands of miles back to the fleet base. This was accomplished by bringing a group of tankers and escort carriers up to a position in the rear of the force operating area and maintaining it there while each task group of the combat force pulled out of the strike activity in turn and rendezvoused with it. Oil, gasoline, replacement aircraft and fresh combat air crews would be transferred to the fighting ships, and the task group would then return to the attack. It was by this means that the force was able to remain "on strike" for periods as long as a month at a time.

Our fast carrier task forces took overwhelming concentrations of air power directly to the most remote and vital positions in the enemy empire. Arrived there, they destroyed or neutralized those positions by *sustained* and *precise* attack which could not then, and cannot today, be matched at such distances and in such volume by any other weapon or agency. They were engaged in doing just that a scant few months ago in Japan when the war ended; yet they have recently been called "obsolescent." If that be so, it is a strange form of obsolescence! END



The Yamashita Trial Changes the Rules

Ranking commanders face new command responsibilities because of the precedent-setting Yamashita trial

By Maj Eugene P. Boardman

The views and conclusions expressed in this article are those of the author and do not necessarily reflect the official policy or opinions of the U. S. Navy.

COMMAND responsibility will extend to the criminal liability of a superior for the criminal acts of subordinates if principles used in the trial of the former Japanese army commander in the Philippines are applied to American forces.

In Manila on 9 October of last year occurred the arraignment of the first major figure of the Pacific War to be tried as a war criminal. The accused was LtGen Tomoyuki Yamashita, an officer who had commanded the Japanese 14th Army Group in the Philippines from 9 Oct 1944 until 2 Sept 1945. The former High Commissioner's residence, a battle-marked building on the Manila waterfront, was the scene of the arraignment and of the trial that followed. Maj Harry D. Pratt, USMC, and I found ourselves on three days' notice attached to the War Crimes Branch, GHQ, Army Forces Pacific, and assigned to the hearings as official interpreters. Our subsequent experience was totally unlike our previous combat intelligence assignments.

At the command of Gen MacArthur the case was tried before a military commission of five army generals, appointed by LtGen W. D. Styer, Commanding General, Army Forces Western Pacific. In effect neither a court martial nor a civil court, this body was directed to follow rules of procedure created specifically for the trial of war criminals. Considerable latitude was given as regards the admissibility of evidence. Acceptable as evidence was hearsay and sworn statements unsupported by witnesses. Further, the commission was both jury and judge. The five army generals were to determine guilt and to award punishment, their findings to be reviewed by the appropriate convening officers.

On the day of the arraignment, Maj Robert Kerr, the chief prosecutor, produced a charge that was as unusual as the rules of evidence under which the accused was to be tried. The following is a facsimile.

GENERAL HEADQUARTERS
UNITED STATES ARMY FORCES,
PACIFIC

Before the MILITARY COMMISSION convened by the COMMANDING GENERAL, United States Army Forces, Western Pacific, 1 October 1945	UNITED STATES OF AMERICA vs. TOMOYUKI YAMASHITA

CHARGE

Tomoyuki YAMASHITA, General, Imperial Japanese Army, between 9 October 1944 and 2 September 1945, at Manila and at other places in the Philippine Islands, while commander of armed forces of Japan at war with the United States of America and its allies, unlawfully disregarded and failed to discharge his duty as commander to control the operations of the members of his command, permitting them to commit brutal atrocities and other high crimes against people of the United States and of its allies and dependencies, particularly the Philippines; and he, General Tomoyuki Yamashita, thereby violated the laws of war.

Dated 25 September 1945
/s/ Alva C. Carpenter
ALVA C. CARPENTER
Colonel, JAGD
United States Army

Gen Yamashita was charged not with ordering the commission of atrocities but with failure to prevent their occurrence. It was not necessary to prove that the General had knowledge of specific criminal acts. To establish that he was in command and that certain acts took place during the period of his command was sufficient. The specifications were considered as

LtGen Tomoyuki Yamashita, "Tiger of Manila," just before the trial.

A nun of St. Paul's College, Manila, tells the court of atrocities committed.

implicit in the charge. A bill of particulars containing some 123 items was submitted as a substitute.

The accused at the arraignment pleaded not guilty to the charge with the remark that he had never heard of the alleged acts. He accepted as counsel the six American officers appointed by the court, but asked and received permission to have his former chief and assistant chief of staff as additional counsel.

Between the arraignment and 29 October, the day of the trial, Maj Pratt and I had a short tour of duty in Tokyo. We talked with Capt Robinson, USNR, a professor of law at Indiana University, who was busy with the preliminaries for the trial of war criminals in Japan. Previous to this discussion we had regarded these trials as regularized retaliation which members of the United Nations could now carry out because they were the victors. If we had lost, we could have expected similar treatment. We put these questions to Capt Robinson: "Why try so-called war criminals? Why not execute them without trial and save everyone trouble?" His reply was a justification of all war crimes work. The victory has presented the world with an opportunity to substitute reason for force by building a body of international law infractions of which will carry penalties. The execution of sentences against offenders will give such law a sanction it never formerly possessed.

Evidence for the trial had been collected for many months. First came incidents that occurred during the liberation of Manila during Feb 1945. Testimony regarding the treatment of internees at Santo Tomas and Los Banos followed, supplemented by accounts of the experiences of American prisoners of war in the Bilibid Prison and aboard a bombed prison ship. The prosecution then presented cases that had occurred in the provinces of Luzon, notably Batangas, and concluded with episodes from the outlying islands of Leyte, Palawan, Cebu, and Bataan.

The acts charged fell into three general categories, outrages against the civilian population, violations of the laws of war relating to military prisoners and civilian internees, and wanton destruction of non-military property. It will suffice to outline the general pattern brought out by days of similar testimony.

During the siege of Manila a common Japanese practice was to tie together groups of civilians and confine them, irrespective of sex or age, within a given building. The building was then set on fire. All who sought to escape ran a gauntlet of rifle and machine gun fire. The culminating episode of this type was the massacre of several thousand civilians in the cell blocks of Fort Santiago within the walled city. Another common procedure was to assemble random groups of male civilians for mass execution by the sword. Men were brought one by one into a house, made to kneel over a hole cut in the floor, and then beheaded. The remains were pushed into the hole. If these killings had motives other than the extreme chagrin of the Japanese at their imminent defeat and resentment for the fancied failure of civilians to cooperate, the testimony did not so indicate. No evidence of written authorization for the killings was presented. The prevalence of rape and looting at the same time indicated a situation in which many Japanese troops had ceased to be

under the control of their officers.

In the provinces the slaying of civilians seemed to be motiviated to a greater extent than in Manila by retaliation for guerrilla activity. There the two procedures mentioned above were preceded by an attempt to sort out their enemies. Civilians were first assembled in the local cathedral, the Japanese telling the people not to worry, that this was a measure for their own protection. Once in the church, they were formed into single file and made to pass one by one before a hooded figure, presumably a collaborator, who pointed out Filipinos suspected of helping the guerrillas. The suspects were led away to be killed while the rest were sent home.

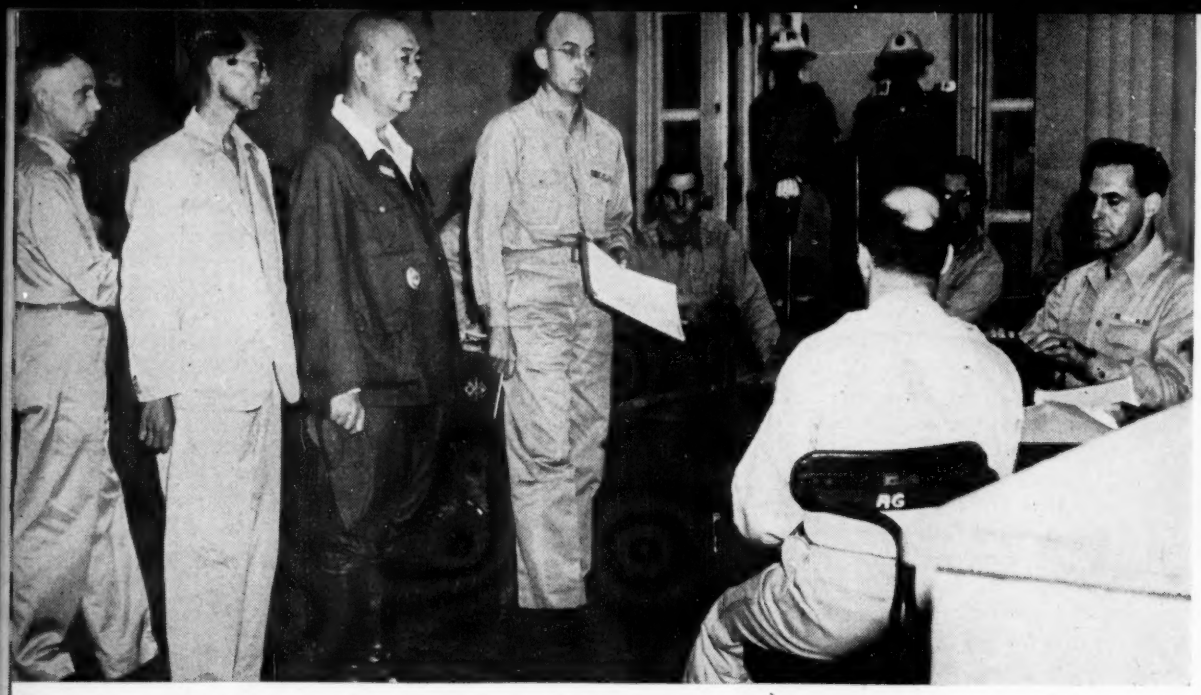
The treatment of internees by the Japanese army certainly indicated no scrupulous attempt to observe international law. Internees were the victims of mismanagement, over-crowding, meanness, and what seemed at times deliberate starvation. POWs fared worse, for they were put at hard labor and were subject to the hazards of military interrogation. Military prisoners were beheaded on Cebu and Bataan and massacred on Palawan.

The reprehensible practices of Japanese military police were frequently described or referred to in testimony concerning civilians, internees and POWs alike. Finally the prosecution accused Gen Yamashita of permitting the systematic destruction of the business section, the best public buildings, and the finest residential areas of the city of Manila.

The court allowed three weeks for presentation of the case against Yamashita. Evidence was submitted during this time of an overwhelming number of deaths due to Japanese atrocities. (The prosecution said 60,000 civilians perished.) The fact was established that Yamashita had been in over-all command of the defense forces, but little was offered in the nature of definitive proof that he personally had ordered, condoned, or even knew about the acts complained of. These matters were left to inference. The charge against the accused was for responsibility, not participation, yet no testimony was given relative to the lines of command existing among the Japanese forces at the time. Nevertheless, strictly speaking, the prosecution had only to prove that atrocities had been committed while Gen Yamashita was in command. This was done.

As befitted a trial of new concepts, the defense of the Japanese commander was energetic and skillful. A taff of six army officers headed by Col Harry E. Clarke exploited every possible point that could be used in defending the accused. Their efforts followed two lines of approach. One was an attack on the validity of the proceeding itself and the other a rebuttal of

Yamashita discusses the charges with Maj Boardman and Mr Hamamoto.



With the author standing at his left, Yamashita enters the plea "not guilty."

testimony introduced by the prosecution.

The defense used a number of high-ranking Japanese officers led by LtGen Muto, Yamashita's former chief of staff, to show that of the 300,000 troops in the Philippines on Oct 9, 1944 (the date Yamashita assumed command) only 140,000 were under his control until 6 Jan, 1945. So-called Line of Communications troops who had charge of all internees and prisoners of war took their orders directly from Tokyo. Air force and naval personnel were not put under his command until 6 Jan, 1945 and then only for tactical purposes. Even then he did not gain control in matters of discipline and personnel administration. The situation in Manila during the first two months of 1945 was a good example of the confused state of the lines of command. The Japanese who eventually defended Manila were commanded by naval officer, RearAdm Iwabuchi. Under him for tactical purposes was a small army force, the Noguchi unit, (which in turn was not subject to his disciplinary control) and a body of naval troops, the 31st Base Force. Yamashita through a subordinate general ordered Iwabuchi to evacuate Manila before the Americans came. The naval commander had prior orders from ViceAdm Okochi, senior naval commander in the Philippines, to destroy wharves, warehouses, and port facilities. These orders were not revoked on 6 Jan. The evacuation never took place. As a result Manila was made a battleground against Yamashita's command during Feb 1945. The naval commander was not subject to punishment by the army for this breach of discipline. The above was presented in extenuation of Yamashita's responsibility.

Attorneys for the defense made much of the difficulties which beset the Japanese commander. The effectiveness of American submarine attacks always made uncertain the arrival by sea of fresh troops, food, military supplies, and gasoline. From Sept 1944 on, Japanese ground forces were subject to constant air attack without adequate defense. There was critical shortage of motor transport. Japanese communications, inadequate under normal conditions by American standards, became fantastically poor. During the siege of Manila, Yamashita was more than one hundred miles away at Baguio. Reports of the fighting were relayed to him through LtGen Yokoyama, a subordinate commander in charge of the general area which included Manila.

The general hostility of the civilian population and the presence of a powerful and growing guerrilla movement added to his difficulties. A plot to blow up his headquarters at Fort McKinley came close to being successful. In Batangas province it was not considered safe for less than a squad of soldiers to appear on the highways in broad daylight. These difficulties were adduced to show that his primary military responsibilities left Gen Yamashita time for nothing else.

Other efforts of the defense were devoted to the proposition that the Japanese general was the kind of man who knew international law and would have enforced its observance by his troops under more normal conditions. Various character witnesses were brought to the stand from Japan to give testimony, but on this point the Japanese commander was his own best witness. He made a strong, dignified appearance in presenting the following statement:

"The matters referred to in the charges I have learned about for the first time from wit-

Ricardo Esquerra exhibits to the court Jap inflicted sabre scars on his neck.

nesses in this court. If such acts were committed by my subordinates, they were committed in complete disregard of my orders and intentions. If such acts did occur, I feel that they occurred at such a time and place that I could not have known of it. I have never ordered such things and I have never condoned such actions, nor have I recognized such actions. If I had known in advance, I would have taken every possible means to cause them to stop. And if I had found out about them afterwards I would have punished them to the fullest extent of military law."

The only incident of which he admitted knowledge was the murder of a number of Spanish civilians in Manila during Feb. 1945. News of this reached him several months later as a result of a protest to Tokyo by the Spanish gov-without result, mainly because by that time Japanese forces had been driven out of the Manila area.

The prosecution did not present proof to refute Yamashita's statement; instead, it resorted to the contention that the Japanese commander was "not interested" in seeing that his forces were kept from actions that caused the deaths of more than 60,000 defenseless and non-combatant Filipinos. It was asserted that the Japanese leader must have known of some of these incidents.

Strictly construed, the arguments of the defense just described were beside the point. The charge as accepted left no room for a plea of ignorance. If Yamashita was in command and atrocities were committed by his troops, he was guilty of failing to present their commission. The best the defense could hope for was mitigation of the sentence.

Language problems dogged the trial from the start; no less than eleven languages or dialects were used in the course of the trial. English, Spanish, and dialects of Chinese and Tagalog were heard during the presentation of the case of the prosecution, whereas almost all the witnesses for the defense used Japanese.

Mr Hamamoto, Gen Yamashita's personal interpreter, handled communications between the general and his counsel and kept his superior informed of the proceedings in court. Both he and a Japanese linguist attached to the prosecution kept tab for their respective sides of the accuracy of the work performed by the official interpreters.

The correct rendering of meanings into understandable Japanese or English was at best a slow and painstaking job. Speed was necessarily a secondary consideration. Even for an educated native, Japanese is a vague language, ill-suited to the niceties and verbosities of legal phraseology. After painful experience with long, involved questions, the trial lawyers learned to use short questions and simple terms. At one point the demands of the situation were met by placing two Nisei and one white officer at the interpreters' table. One Nisei whose knowledge of idiomatic English was adequate performed before the microphone. At his elbow was a Kibei (a Nisei born in America but educated in Japan) whose ear was good at picking up everything a witness said. A white language officer was present to supervise, supply military vocabulary, and make statements to the commission for the record.

Before the commission was through it had heard testimony from upwards of 300 witnesses and had received some 433 exhibits in evidence.

All sessions except two were open to the public. The concensus was that the members of the commission had made every effort to give the accused a dignified and a fair trial.

On 7 Dec 1945, MajGen R. B. Reynolds, the presiding officer, read the verdict of the commission and pronounced sentence on Gen Yamashita. Quotations from the verdict summarize adequately the reasons for the decision:

". . . we were impressed by the candor, honesty, and sincerity of the witnesses . . . the testimony indicates that Japanese senior commanders operate almost in another world with respect to their troops, compared with the standards which American generals take for granted. It is absurd to consider a commander a murderer or rapist because one of his soldiers commits murder or rape. Nonetheless, where murder and rape and vicious, revengeful actions are wide-spread offenses and there is no effective attempt by a commander to discover and control criminal acts, such a commander may be held responsible and even criminally liable for the lawlessness of his troops, depending upon the nature and circumstances surrounding them. . . . This commission finds that a series of atrocities and high crimes were committed by Japanese armed forces under your command against nationals of the United States and its allies and dependencies; that these were not sporadic incidents, but were often methodically supervised by Japanese officers and non-commissioned officers. During the period in question you failed to provide effective control of your troops as required by the circumstances. Accordingly, on a secret ballot, two-thirds or more of this commission concurring, this commission finds you guilty as charged and sentences you to death by hanging."

In a statement read before the pronouncement of the verdict Gen Yamashita protested his innocence of the charge, expressed appreciation of the efforts of his defense counsel, and thanked the commission for a fair trial. The verdict and the sentence were later upheld by the convening officers, LtGen W. D. Styer and Gen MacArthur. The findings themselves were not reviewed by the United States Supreme Court when it held hearings the following month.

The efforts of attorneys for the defense to impugn the validity of the trial itself began with the arraignment. At this time Col Clarke raised objection to the charge itself, pointing out that it failed to specify any particular violation of the laws of war.

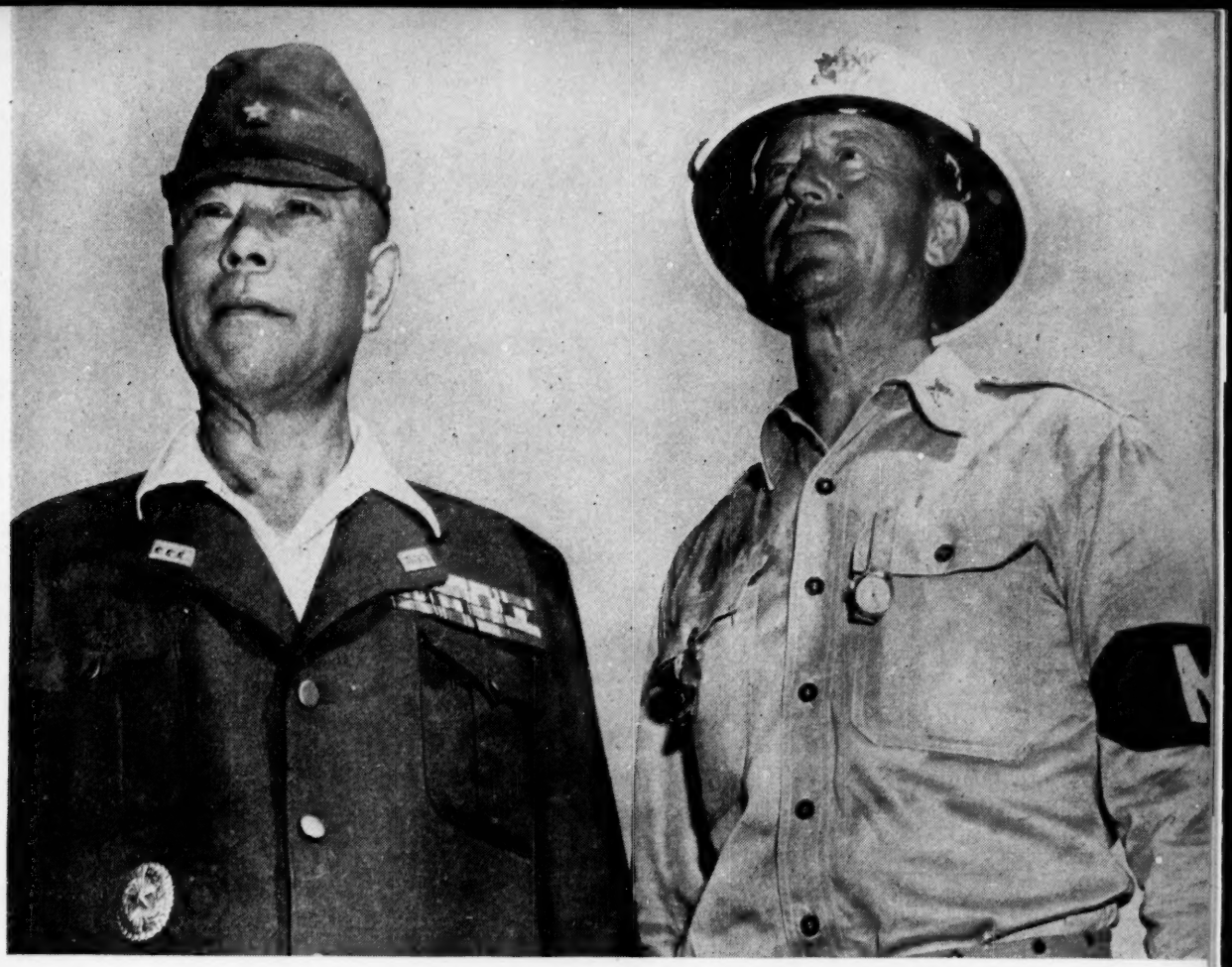
The defense next questioned the authority under which the commission was constituted. Hostilities had ceased. The Philippines were no longer under martial law; civil courts had been reconstituted and were functioning. If the war was over, then a military commission sitting in the Philippines lacked the requisite authority and Gen Yamashita should be tried by a civil court. Following this line of reasoning, the defense made an unsuccessful appeal to the Philippine Supreme Court for a writ of habeas corpus. If the war was regarded as still in progress, though hostilities were over, then Gen Yamashita should be considered a prisoner of war whose rights to treatment equivalent to that due American prisoners were guaranteed by the Geneva Convention. In that case he was entitled to trial under standard court martial procedure by a genuine court martial. The commission was neither a civil court nor a court martial. It followed a procedure unlike that of a civil court or of the Articles of War. There was no valid basis for the authority of a military commission in this case.

MAJ EUGENE P. BOARDMAN was one of the Marine Corps best qualified language intelligence officers. Entering the service before Pearl Harbor, he was assistant R-2 with the 2d Marines at Guadalcanal and Tarawa, was with the 2d MarDiv's Two section at Saipan and Tinian. He holds the Legion of Merit. Recently discharged he plans completing his studies for his doctorate.

Throughout the trial the defense objected to the amount of hearsay permitted. Particular exception was taken to the introduction of sworn statements to prove a specification without the presence of corroborating witnesses. This practice denied the defendant the privilege of cross-examination. The Articles of War expressly forbade the introduction of depositions in capital cases.

Under the terms of the regulations governing their appointment, members of the commission had no choice but to over-rule all the objections of the defense. The principle of the criminal responsibility of leaders for the criminal acts of their subordinates was approved by implication in the following extract. "*Leaders, organizers, etc. . . . participating in the formulation or execution of any . . . common plan or conspiracy (to commit offenses against the laws of war) will be held responsible for all acts performed by any person in execution of that plan or conspiracy.*" Nor could members of the commission very well question the convening authority of their own commanding officer. A decision on these matters had to be made elsewhere.

On Jan 7 and 8 of this year eight members of the United States Supreme Court (Justice Jackson was absent) met to hear the arguments of counsel. Col Clarke and his assistants re-



LtGen Tomoyuki Yamashita stands with his jailer, Maj Kenworthy.

peated the points mentioned above and asked that the Supreme Court take the case from the War Department and allow Yamashita to be tried before a United States court. They contended that the commission had violated several safeguards of legal procedure set up by Acts of Congress and intended to apply to all men, not just citizens. An opinion of the court was sought regarding whether the war crime of a subordinate in the army "committed without the order, authority, or knowledge of his superior" was the war crime of the superior. If it was maintained that the war was not over, since Congress had not yet declared it over and no peace treaty with Japan had been signed, then Yamashita had a right to the intervention of the United States Government to see that the principles of the Geneva Convention were observed.

In reply Solicitor-General McGrath and his assistant pointed out that the President had the right to establish procedures protecting the country's interests in matters of foreign policy. President Roosevelt had exercised this right in establishing a policy to bring war criminals to justice and the War Department was simply carrying out his policy. The trials of war criminals were part of the power of waging war, with the military functioning as an arm of the Chief Executive in his position as Commander-in-Chief. Technically we were still at war. Gen Yamashita, an enemy billigerent, was entitled to no rights in our courts in time of war.

The Supreme Court announced its decision on Feb. 4, in it refusing to review the conviction and over-ruling the appeal on all points. Chief Justice Stone read the majority opinion. "It appears that the order convening the commission was a lawful order, that the commission was lawfully constituted, that the petitioner was charged with violation of the law of war and that the commission had authority to proceed with the trial, and in doing so did not violate any military, statutory, or constitutional command."

In dissenting opinions Justices Rutledge and Murphy held that Yamashita was entitled to a trial in complete conformity with American domestic procedure.

Gen Tomoyuki Yamashita was hanged outside Manila the early morning of Saturday, Feb. 23, 1946. Thus ended an episode of interest to members of the military profession everywhere. The United States has now taken a decisive step toward establishing the principle which is a new concept of command responsibility: *that the war crime of a subordinate, "Committed without the order, authority or knowledge of his superior," is the war crime of the superior.* **END**

UNITED STATES MARINE BAND

Let's Return to Fundamentals

By Maj J. A. Donovan, Jr.

THE Marine Corps finished the war with a glorious record, an unexcelled reputation as fighting men, an continued high *esprit de corps.* We are fortunate in that most young men who don the Marine uniform immediately believe they are in a select organization and they are proud to be a member. During the war the daily news assured them that they were part of a real fighting outfit.

Now that the fighting is over, however, we might do well to take stock of ourselves and see if perhaps our real character has not changed a bit under wartime strain.

The hard nucleus of professional regulars who nurtured the large wartime corps is now spread thin. But let no one deny them credit for furnishing much strong character to the Corps.

The pre-war standards of discipline, appearance, conduct, and pride were carried over into the expanded Marine Corps and contributed greatly in making the Corps what it was. These standards did suffer in the process, however. In basic military characteristics the Marine Corps is not as sound as it was before the war. Let's face it—and let's immediately begin to do something about it.

We are returning to a comparatively small professional organization. It will consist mainly of volunteers. This new generation of marines may in the future have to provide the high standards and strong character that can withstand the depreciation wartime expansion causes in certain elements of any military organization.

In order to foster the natural pride that a marine acquires by joining the Corps, we must recognize the psychological value that certain aspects of military life have, particularly in peace time.

The post-war Corps had the reputation of being the cleanest, toughest, best-drilled, straightest shooting, best disciplined, and most colorful outfit of all the U.S. forces. The public pictures us that way—and good men joined the Corps to become a part of it.

We must now bend every effort to justify our old reputation by returning to those military fundamentals.

First we must provide the martial background to daily military life by reviving military ceremonies complete with all their color and music. Formal guard mount and weekly parades should be a part of every large unit's program. The unit band should be in evidence more than just at morning colors. And Marine bands should confine their swing sessions to band concerts.

The whole Marine uniform situation has been reconsidered in the light of acquiring combat uniforms that are both practical and military in appearance, as well as a dress uniform that is distinctive and smart looking.

Marines spend entirely too much time in "rag-bag," ill-fitting utility clothes. If we have to put "reet-pleats" and shoulder straps on our fighting clothes—let's do it, so that a man never forgets he's in a uniform. Everyone knows the value to self-esteem and morale that a suit of dress blues has upon the average marine. Let's capitalize on his pride and have good uniforms for all occasions. A man will act like a marine if he looks like a marine.

All hands should make an effort to revitalize our reputation for "spit and polish" appearance. From the short haircut to the shiny heels of his shoes a marine should be the epitome of careful grooming and smart turnout. This includes shaggy-haired majors, lieutenants who haven't polished their bars in months, as well as privates who need a pressing job.

In fact officers can do much to improve the standards of appearance that they set for the men—as well as standards of military conduct. The men expect their officers to look and act the part. It's not enough to have a war record or to be a smart fellow. An officer should know how to do a snappy about-face and be exactly correct on drill and parade as well as be smart and look smart. Then he should see that his men are equally smart.

At the same time let's insure the dignity of the NCO. They have been called the back-bone of the Corps, yet during the war we found lieutenants doing sergeants' work, and sergeants doing privates' jobs. Now, we should turn over more responsibility to these men, at the same time give them the privileges of their rank. The Marine noncommissioned officer is rightfully a proud and capable person. Let us give him his just dues.

There should be a common standard for appearance and conduct throughout the Corps. We

The Marine Band at the Nation's Capitol is a long established symbol of Marine tradition.

Sea-going marines have always maintained a reputation for smartness of appearance.

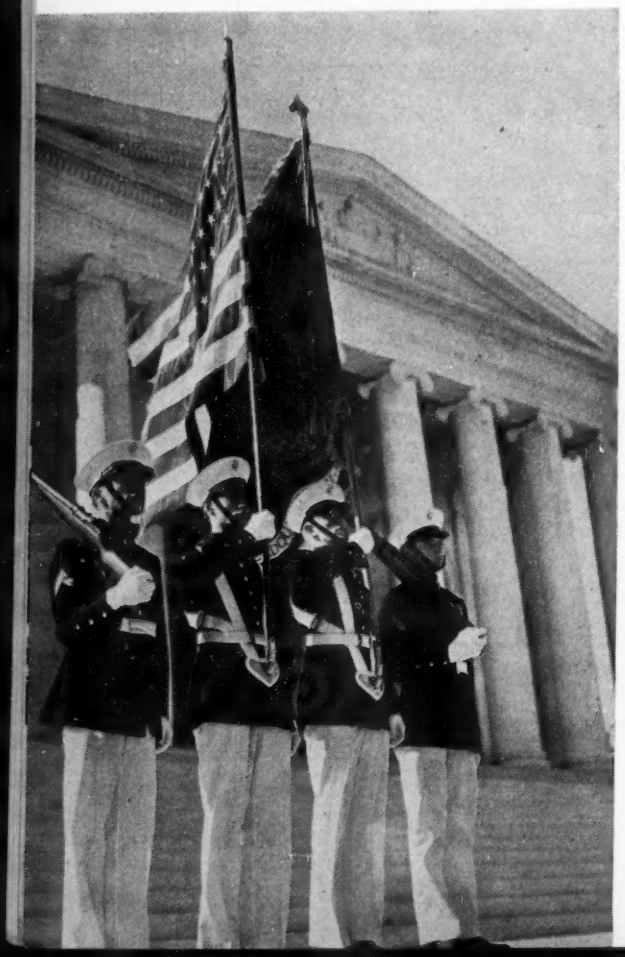
have no room for the carelessly run post or the sloppy unit. A Marine sentry on the East coast of the United States should be just as snappy as the one at the Main Gate at Pearl Harbor.

Of course much of what we have been discussing boils down to training and "discipline" —that much maligned word we read about in the misinformed public press. Military standards are not attained by wheedling, coddling, or even progressive civilian educational methods. The services set their standards and regulations, and the men in uniform are rightfully expected to conform without question, or without recourse to devious methods of complaint such as have plagued the armed forces recently. The Marine Corps has a great asset in the boot camp method of indoctrination. Let us not lose sight of the value to the Corps of this means of instilling discipline in new marines. The boot marine should be made to know that he is a man among men, and made to act like one.

This early training should put heavy stress on drills, discipline, and marksmanship. All marines should know how to stand straight as well as shoot straight, and the expert rifleman should be the envy of all his buddies.

At the same time we must make continuing efforts to orient and indoctrinate all marines in what their duties are as public servants in uniform. The war demonstrated once again that the American fighting man likes to know the reasons for what he has to do in the line of duty. But orientation of the military should never resort to salesmanship or cajolery—it is merely additional information that is made available to aid in a more intelligent execution of orders.

If, during this present period of transition, all Marine officers take it upon themselves to contribute to raising the basic military standards of the Corps we will have an outfit that knows "how to shoot—and how to salute," and by so doing we will insure that neat hard core of professional character that can withstand the ravages of peace as well as war. END



. . . the neatest on parade.
The toughest on the field . . .

"We're headed for Wake"

A tiny task force set out to aid the Marine defenders of the beleaguered atoll

By LtCol R. D. Heinl, Jr.

Illustrated by Pfc David E. Craven

ON 20 December, 1941 (East Longitude), a westward-moving carrier task force convoying transports loaded with troops, equipment, and supplies for the relief of Wake Island, received final orders to turn back.

Although the embattled atoll was less than two hundred miles distant, hardly a day's sailing, the Japanese had commenced their final overwhelming assault, and relief was now out of the question. To marines who participated in this heartbreaking race, the attempt to relieve Wake will long remain one of the tragic failures of the war.

This is a narrative, mainly from the troop point of view, of that expedition.

The story must be projected against the background of Pearl Harbor. Sunken warships had not ceased to smoulder before men began to ask each other, "What about Wake?" Yet there were many commitments to be made, and few resources available. Those who had seen the United States Pacific Fleet put out of action under their eyes still found it incredible that Oahu itself was not already besieged, and it was evident that the perilously weak outer marches of the Hawaiian area must be reinforced immediately. With the core of the Fleet on the bottom of Pearl Harbor, there could be no question for the time being of an active defense. The outer islands would stand or fall by their own strength and by the ability of their Marine garrisons, perhaps slightly augmented from the small resources at Pearl Harbor, to keep from being snuffed out like Guam. To reinforce these islands —Johnston, Palmyra, and Midway were the key points—available Marine forces on Oahu included two defense battalions, the Third and Fourth; elements of the First Defense Battalion, whose Wake Detachment was even then making history; and miscellaneous barracks and ships' detachment personnel. If Wake was to be relieved, it would constitute a charge against this meager balance.

Three days after the Pearl Harbor blitz, elements of the Fourth Defense Battalion, at that time still in position where they had set up under enemy attack in and about the Navy Yard, were alerted for immediate embarkation. Batteries went into march order, fire-control instruments were checked for any minute flaw, and troops were issued clothing as well as the hand-etched monel metal identification tags, still as novel as the steel helmets which everyone had donned on the 7th. The destination was secret but like many such, it was badly kept: "We're headed for Wake" was the word which circulated all day on the 10th. By nightfall substantial progress had been made in equipping the tiny relief force for departure, and assembly of supplies by blackout, no simple task in those days, was well along.

Heading out to sea from Pearl Harbor the convoy passed a downed Jap bomber.

But late in the day came further orders—hold everything; the expedition had been called off. Return to battery positions. And the only reward which the men got for their day of special exertion and excitement was to stand another night on watch at the guns, waiting for the return of the bombers which it seemed so surely would reappear over Oahu.

After a victorious war in which, for almost three years, we have been accustomed to selecting our targets and reducing them at pleasure by assault, it may be difficult to recollect the atmosphere of late 1941. Surely it would be difficult to describe the feelings of marines as they watched Wake spend itself heroically during the days after Pearl Harbor. Among the troops who had been readied on 10 December, this sense of frustration was particularly strong, and when, before dawn on 12 December, the first warning orders for re-embarkation were received, excitement ran high. It was known among a few that already an entire ship's detachment, that of the *USS San Francisco,* had volunteered to be flown out to Wake, and if anything were needed to give an edge to the Fourth Defense Battalion's men, this was it. On 12 December, therefore, at "early dawn," to borrow Stonewall Jackson's phrase, the Wake Island relief force began loading the *USS Tangier,* a seaplane tender at Pearl Harbor, which had been hastily designated to carry them forward.

Composition of the tiny task unit, which numbered less than 200 Marines, was as follows:

One 3″ antiaircraft battery (Battery "F", Fourth Defense Battalion),

One 5″ seacoast artillery battery (Battery "B", Fourth Defense Battalion),

Provisional ground and antiaircraft machine gun detachment (from Batteries "H" and "I", Fourth Defense Battalion),

Provisional Headquarters and Service detachment (From H&S Battery, Fourth Defense Battalion).

Over and above this force, although on 12 December few members knew it, the intended Sunday punch of the expedition was a Marine fighting squadron, VMF-221, to be ferried out to Wake aboard the *Saratoga.*

But the men and planes were not all that was being embarked. Most important in the cargo of critical supplies was an item the lack of which had cost Wake many casualties and most of her planes during the initial raids. It was radar, something unfamiliar even as a word to marines of those days. For early warning, one of the few SCR-270 sets then available in the Hawaiian area was stowed aft on the flight deck of the

Tangier, together with one SCR-268, the clumsy ancestor of more modern fire-control radars. At the last minute a group of communication personnel was added to the Fourth Defense Battalion force; these strangers were initiates in the mystery represented by the bulky radar vans and Buck Rogers masts.

Neither the 3″ antiaircraft nor the 5″ seacoast battery carried its guns, but both had an ample supply of fire-control instruments, most of which, it was reported from Wake, were badly needed to replace damaged directors, height-finders, and data-transmission systems chewed up by enemy bombardment. For the time being there would be guns enough on Wake, and the two additional batteries would augment the tired defenders who were attempting to carry out seacoast and antiaircraft missions with the same crews and almost at the same time.

Of ammunition, another critical need, carload after carload was spotted onto the dock-side of the *Tangier*: millions of rounds of belted .50 and .30 caliber, some 9,000 rounds of 5″ shell for the hard-hitting old Navy 5″-51's, barbed wire and grenades. Finally there was a special surprise for the insolent Nip aviators who persisted in flying just above the ceiling of our old-fashioned 21-second powder-train fuzed antiair craft shell—12,000 rounds of 3″ HE with 30-second mechanical time fuzes which would increase the defending AA ceiling by thousands of feet. A small cargo of the same type of ammunition was later to be smuggled by submarine into Corregidor where it would do great execution. The 12,000 rounds for Wake represented the entire quantity available on Oahu; embarking marines were told—make the most of it. A final checkup by the antiaircraft battery-commander, however, revealed one surprising deficiency. Nobody had provided any firing-tables or trajectory charts for the new shell. A search of all local sources, including even the Hawaiian Ordnance Depot, failed to produce results, but an Army officer in the antiaircraft command at Fort Shafter saved the situation by donating a personal copy just before sailing time.

As the loading swirled to completion on 13 December, many marines from other organizations on the Island somehow found their way down to the docks to send off comrades headed for Wake. "Goodbye and give 'em hell!" was the watchword. And that afternoon saw the *Tangier* out in the stream while the balance of the task force formed up. Forty-eight hours later, as night fell on 15 December, the ships stood out of Pearl Harbor for Wake.

The task force, although small by later standards, must have strained the naval resources of the hour. It included the *Saratoga*, loaded for bear with all her own squadrons plus VMF-221; three heavy cruisers, of the *New Orleans* class; nine destroyers; and the oiler *Neches*. It seems unfortunate that this venerable ship, of a class well known for its slowness (12 knots with a fair wind), constituted the task force train, for it held down the speed of the entire force by about one-third. One of the new 18-knot fleet tankers which were then coming into service would have been a Godsend.

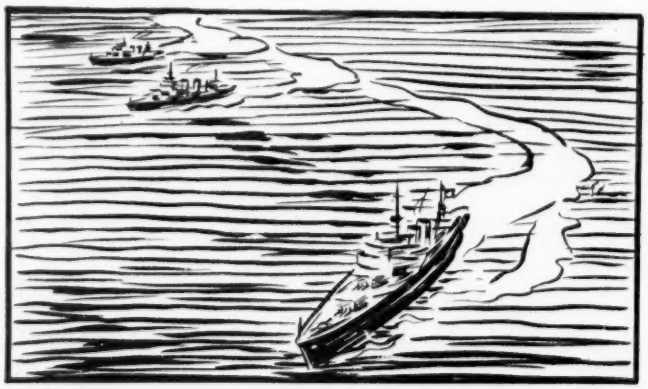
To all hands the twilight sortie from the mouth of Pearl Harbor dramatized the adventure. On the coral reefs just offshore of Fort Kamehameha the skeleton of a crash-landed Nip bomber still hung awash, and the ship stood down the channel within hailing-distance—or spitting distance, for that matter—of the gallant old *Nevada*, the one battleship which had got underway on Sunday morning despite her wounds, but which her captain was forced to beach against a field of green sugar-cane near West Loch entrance. Marines who were fighting time to relieve Wake could hardly foresee that the riddled old ship would live to breach the Normandy defenses and would provide vital fire support for some members of this very expedition at an island yet unthought of, Iwo Jima.

The waters beyond sight of Oahu seemed very lonely waters indeed, and those who had just seen the Japanese Navy materialize a crushing surprise-attack out of nowhere were perhaps inclined to credit the enemy with more omniscience and ubiquity than we later learned that he possessed. Even Midway, relatively close at hand, it was supposed, was barely hanging on, while Wake was far beyond. Columbus' men, sailing westward in hourly apprehension of toppling off the edge of a square earth, could not have felt the seas to be more inscrutable and less friendly. It was of some consolation, however, to learn that another such slim task force was scheduled to strike the Marshall Islands simultaneously with the relief force's landing at Wake. At any rate it is doubtful if dawn general quarters have ever been more wholeheartedly answered than aboard the *Tangier*, while the padre, an Irishman with a grin and an unquenchable spirit, seemed to do a better than average business.

Shipboard life entailed many features novel then, which would become familiar in future operations, such as the minute individual attention to weapons, the honing of bayonets, and the intense study of every available map and chart. In anticipation that the 3″ guns—hard-hitting and quick-firing little weapons—might have to deliver direct local-control fire on ships or ground targets, improvised forward-area sights were designed and turned out in the ship's machine-shop, while the machinegun detachment-commander contrived with the ship's force to construct slings with which his .50

caliber machine-guns could be hoisted from ship to barges in the full ready position to ward off enemy attacks while unloading. The 5" seacoast men stayed in practice by standing their share of condition-watches on the after 5" gun. All AA machineguns were of course set up on the superstructure as well.

In order to acquaint all hands with the radars, familiarization lectures were presented on the well-deck. Betweenwhiles, officers and men cudgeled their brains over the complexities of censorship, the first instructions for which had been received just prior to embarkation. In anticipation that there would be scant time for correspondence on Wake, a stock of "canned-message" postcards were printed up in the ship's printshop. The final sentence was noteworthy: "P.S. We have the situation well in hand."



Disembarkation and unloading at Wake was the subject of many conferences. Since entrance into the lagoon was impossible, it was planned to anchor close off Wilkes Island, top of the wishbone-shaped atoll, and lighter in the troops and supplies. If injured by enemy action before the was unloaded, the *Tangier* was to beach; the reinforcements must be delivered.

Against the steady westward march of the task force were the reports of and from Wake. "They hit Wake again today" would send an uneasy thrill among all hands, while the unimpressive news from Hong Kong, then crumbling dispiritedly before the Japanese advance, was hardly calculated to raise men's spirits. The net daily advance seemed small and the day virtually lost while fueling destroyers at sea increased the tension. The tin cans carry only enough fuel to make the round trip with nothing to spare; we must take no chances on their being caught short.

By the morning of Friday, 20 December (East Longitude), plans for the landing were complete. The task force would reach Wake early the next day. Loose gear and equipment were collected and squared away; weapons were rechecked; the charts received their final study. Word was abroad that yet another Nip attack might be impending—the debarkation must be expeditious.

Sometime during the forenoon, with Wake but 20 hours away, observers on topside suddenly realized that the ship's shadow fell in the wrong direction. And a few minutes later, as a physically tangible sense of futility and failure took possession of marines who had already come to identify Wake's survival with their own, it was learned that final orders for a retirement had just been received. The relief had been too late, and for Wake—the rest would be silence.

More might be told of the return voyage; how in haste to break clear of powerful enemy forces the plodding *Neches* was dropped behind with a solitary destroyer; how the retiring task force hit the dateline over Christmas so that there were two Christmases; how the *Tangier* herself was also dropped by the main task force, which smelled a fight west of Midway; and how elements of the intended Wake expedition debarked to reinforce Midway, which was on short rations and prepared for the worst. But Midway, despite its own more than critical importance in the scheme of things, represented anticlimax to those who had started out for Wake. These marines, in looking back on their attempt, would review the aborted operation in terms of a number of tantalizing "if's," the series of adverse factors which had combined to delay the expedition:

What if the original false start of 10 December had been pressed to completion rather than cancelled and resumed 48 hours later?

Could the task force have been assembled sooner and thus sailed about 13 December, when the *Tangier* was loaded, rather than delaying almost two more days prior to sortie?

Suppose that an 18-knot tanker had been available instead of the 12-knot *Neches*—would this not have permitted a higher speed of advance and have saved two of the six days between departure and final turnback?

Could the refuelling of destroyers, which consumed a day on the trip out, have been postponed until arrival at Wake?

But a still greater imponderable tops all these: supposing that the relieving force had been able to break through and land—could Wake have been held? Would a few hundred more men, some airplanes and some ammunition have saved the island? To those who shake their heads and think not, the only answer is that there were marines in 1941 who would have been proud to chance it. END

Combat Air Observation

Ground action in the Pacific required faster, more detailed observation than was possible with previously accepted methods

By Capt David Lubin

THE first major operation in the Pacific in World War II was the Guadalcanal campaign, and this operation gave birth to World War II Marine air observation. This was the first phase of its evolution—the realization of the need for organized air observation.

All of the problems of jungle warfare were quickly and completely presented by the Island. Even before the first landing was made, it was realized that available maps and photographic coverage were extremely inadequate for proper study of the terrain. Rough terrain and dense vegetation made immediate observation of paramount importance. The only observation agencies available were the conventional artillery and infantry observation posts which worked well in training where the situation could be altered to fit the problem, but were soon found lacking in the jungle.

Field artillery set up observation posts in the best possible locations. Within the inherent limitations of fixed positions, these OPs did remarkably well in adjusting artillery fire and reporting intelligence. Division Headquarters established an intelligence observation post in conjunction with one of the artillery flash-ranging OPs.

Well-trained ground officers and enlisted men manned these observation posts and used every available optical device they could find to improve their seeing ability.

But the Marines moved fast and continuous observation became a serious problem. As the terrain became more rugged, OP displacement in time to keep up with the ground troops became almost impossible. One improvement in the situation was made when the first 20 power and 15 power Japanese BC scopes were captured. But soon it was discovered that even high powered optical instruments could not see around or through hill masses and displacement of the OP was not possible.

The limitations of the Guadalcanal OPs clearly indicated the necessity for a better means of observing the ground.

When certain hot spots were reached, air strikes were requested. P-39s were available at the time and their striking power was very effective, particularly in the case of areas such as caves on reverse slopes that artillery could not reach. But poor maps and inadequate observation made it very difficult to pinpoint targets.

Ground observers devised a system for helping the strike aircraft locate their targets. Forward observers on artillery OPs adjusted smoke shells on the hot spots after the aircraft arrived on station in the vicinity of the observation post. The smoke shells marked the targets and the planes were able to attack successfully. This method was the beginning of one of the missions air observers have today, that of marking targets for air strikes. This method, however, was useful only in areas under ground observation, and these were becoming too few.

The critical nature of the Guadalcanal operation called for immediate action and it was decided to try air observation. The Marine Corps did not have any trained air observers so a few of the best suited officers available were sent to Henderson Field and flown over the front line areas in fast aircraft to report what they observed.

This first attempt at combat aerial observation was effective but still lacked something. The cooperation between ground troops and the airborne observer was limited. Coordination was poor and in many cases entirely absent. Ground troops were reluctant to display panels to show their position and pilots and observers had difficulty in locating them.

Furthermore, it was apparent that while the marine officer in the plane could observe and report a great deal of activity and intelligence of value to division headquarters, there was still a great deal of information that escaped his observation because he was not trained in seeing from the air.

The problem of poor or incomplete maps went along with that of poor observation. Near the end of the Guadalcanal campaign the troops and observers "ran off the map." All that was left near the end was one highly inaccurate map which had been compiled from old sailing charts and ancient hydrographic data, some of which was over 50 years old. To overcome this difficulty Second Marine Division Headquarters constructed a hasty photo mosaic which was quickly reproduced in field laboratories and distributed to the ground troops. This photomap became

the prototype for similar photomaps used in every other operation in the Pacific.

Along with this first attempt at aerial observation the forerunner of air observer photography was born. A division intelligence section photographer was sent aloft in an SBD to take handheld oblique photographs of areas of which there were no maps or where the maps or old photo coverage was incomplete.

These photographs were used as map substitutes by numbering the hills. They formed the basis for much of the terrain study near the end of the operation.

The hand-held photographs taken in the Guadalcanal operation were almost a novelty. However, they were of such definite value that they have become an established part of air observation methods. In later operations air observers made history with handheld photographs.

By the time Guadalcanal was secured, several observers and intelligence officers realized that some system of organized aerial observation would be essential for future amphibious operations. It would have to be organized in training and application to overcome the deficiencies pointed out by the limited use of observation aircraft in the Guadalcanal operation.

After leaving the Solomons, the Second Marine Division returned to New Zealand for rehabilitation and further training. The intelligence section of the Division arranged to have several officers trained as air observers. To accomplish this a General Reconnaissance Squadron of the Royal New Zealand Air Force was placed at the disposal of the Division. The RNZAF had a well organized and highly developed system of aerial reconnaissance and observation training and an excellent syllabus was compiled by personnel of this squadron working with Marine officers. This was the second phase—the beginning of air observer training.

The first class of Marine officers detailed to air observer training was composed of infantrymen, artillerymen and members of the Division intelligence and Air Photo Interpretation (APᴵ) section. Students were selected who had a thorough background of training in tactics and most of them had seen combat duty in the Solomons. Classes were held in map reading and air photo interpretation. Hand-held photography was improved and flight problems were arranged so student air observers could learn to locate and identify ground troops under various terrain and combat conditions. Arrangements were made with Marine artillery to fire problems for the students and a SOP for aerial adjustment of artillery fire was worked out. Harvards, the equivalent of our SNJs, were used to train the students for later combat operations in heavy aircraft such as the TBM and SBD.

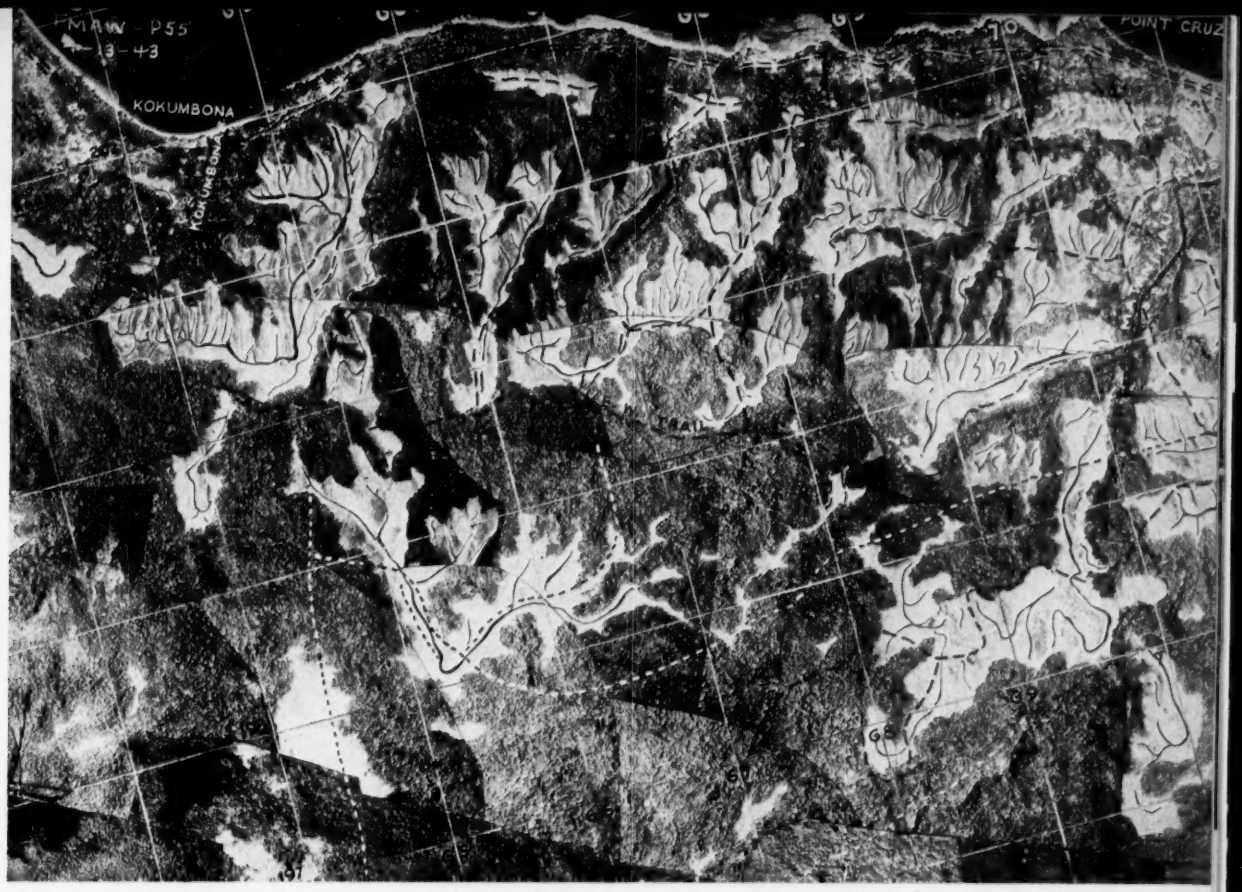
Late in 1943, following completion of the Air Observers School in New Zealand, Marine Corps Headquarters authorized the designation of "Tactical and Gunnery Air Observers" for each Marine division. Provision was made for officers so designated to receive observers' pay.

At this time the Second Marine Division was preparing for Tarawa. Maps and aerial photographic coverage of Betio were far superior to the coverage for the Guadalcanal operation; however, the necessity for aerial observation was apparent from study of the flat terrain of the atoll.

There was still no organization set up for the employment of Marine air observers in combat and no definite idea regarding the source or base of aircraft for such observers. Consequently provision was made for a naval aviators on the command ship to act as air observer for the commanding general. Two naval aviators alternated in flying over the target area in OS2U aircraft.

The work of the two air observers in this operation was outstanding. However, one of the deficiencies noted in the Solomons operations was also noted here. The air observers worked hard. They flew over enemy territory constantly during hours of daylight. They reported everything they saw and they had good communication.

Photo map substitute used on Guadalcanal.



Hasty photo mosaic made on Guadalcanal was useful to troops and air observers.

But, too much of what they saw was strange to them and flying in fast aircraft did not permit time for evaluation. Lack of training in ground operations and the Marine way of doing things and lack of understanding of ground troop tactics made it impossible for them to give complete reports. Enemy camouflage baffled them and in many cases they were unable to accurately evaluate what they saw because they had not had sufficient previous training and study in the location and identification of weapons, vehicles and installations. Hydrographic conditions were one of the main problems of the Tarawa operation and the air observers were unable to give accurate hydrographic reports.

It was now realized that the best observation could be furnished only by Marine officers who knew what was going on on the ground and who had been trained to see and evaluate ground activity from the air. This was the third phase—the realization that Marine officers must observe Marine operations.

An air observers school was established in the Division after it returned to the Hawaiian Islands for training, and Division and regimental air observers continued their training. The syllabus was extended to include more training in identification of weapons and installations, more communication practice and all observers were sent to a naval aerial free gunnery school to equip them to take the place of the gunner in fast aircraft during the next operation.

While Second Division air observers were completing their training, the Fourth Marine Division embarked for the Marshalls. Two staff officers were designated as tactical and gunnery air observers and placed aboard an aircraft carrier so they could have suitable aircraft available and be over the target area in time to report the landing.

The Roi-Namur operation was the first Marine campaign in which Marine combat air observers were in the air. This was the fourth phase—trained Marine air observers were to fly in battle.

The air observers who participated in the Marshalls operation realized that they would have to make their training continuous. Study of previous amphibious operations and observations made during the Roi-Namur campaign showed that there was always something new to learn in air observation—a new weapon to identify, or some new type of camouflage or a better way of getting spot pictures for terrain study. Changes and improvements in operations plans necessitated constant study on the part of the air observer.

More schools were arranged for. The training syllabus was elaborated. More time was devoted to communication. The air observer and the staff that received his reports knew how important communication was. Large scale operations involved travel over tremendous expanses of sea and air observers learned elementary navigation. Training in air photo interpretation was

stepped up and air observers became better intelligence officers. More flight experience was picked up during training periods.

When the Marianas target was assigned to the Second and Fourth Marine Divisions, air observers began to train intensively for the operation. Combined exercises with air strike groups were arranged and large scale mock-ups of Saipan were laid out in the training area in Hawaii for coordinated exercises in which ground troops, aircraft and air observers participated.

Each Division had a full complement of air observers when it embarked for Saipan. Tactical air observers were attached to Division Headquarters and gunnery air observers to artillery regiments. Specially trained tactical and gunnery air observers were sent out to support ships, battleships and cruisers, to act as spotters for naval gunfire before D-Day.

Air observers for each division were embarked aboard different aircraft carriers and while enroute to Saipan constantly studied latest available information about the target area. Arrangements were made with ship's communication officer to have monitoring facilities provided for the air observers aboard. Pilots were assigned for observation duty and observers and pilots had a fine opportunity to get acquainted—a fact which added greatly to the quality of the missions they were to perform later. The squadron and ship's intelligence officers compared notes with the air observers and made available to them space and facilities for briefing and keeping situation maps.

At the request of the ship's captain, air observers briefed the entire ship on the coming operation to insure better understanding of the part to be played by the ground forces.

Air observers for both divisions were over the beaches on D-Day before H-Hour. They began reporting as soon as there was enough light to see the ground. From the first report about formation of boat waves on D-Day until the Island was secured, air observers flew over the target during hours of daylight.

The specially trained gunnery observers assigned to support ships knocked out as many targets as time permitted prior to D-Day. The gunnery air observers attached to the artillery regiments continued on these missions as soon as field artillery was in position ashore.

Tactical air observers took photographs for terrain study and map correction. They checked targets for the photo interpretation section. They reported location of friendly and enemy activity, spotted tanks, in some cases attacked isolated targets with rockets and machine guns. Sometimes they adjusted artillery fire when artillery air observers were busy on other missions.

Air observers searched for targets from morning until dark. They learned how to direct their pilots so they could see under camouflage, so they could pick up tanks from their track activity and so they could even see into the mouths of caves.

When Saipan was secured air observers immediately began reconnaissance flights over Tinian. Long before J-Day they discovered land mines on White Beach. They proved their visual observation by taking low level hand-held

An early hand-held photo used for rapid terrain study when the map "ran out."

The ubiquitous lightplane OY-1 became the eyes of the earthbound artillery.

photographs of the mines buried in the sand. They learned how to preserve security and gain additional information by flying over and observing several beaches instead of just the one assigned for the landing.

Again, on the day of the landing, air observers were over the beach before the troops went ashore, reporting progress of the landing waves and activity of the enemy.

During the Saipan-Tinian operation several air observers were shot down. Some were wounded by small arms fire while making extremely low passes over enemy installations to get positive identifications. Many such missions were flown in the now famous unarmed and unarmored OY-1 aircraft.

During the Saipan operation, the air observers for both divisions lived together with the VMO squadrons in old Japanese barrack on Isley airfield. After the day's missions were completed they had opportunities to compare notes and discuss the various things they had observed and reported during their flights.

These informal conferences each evening soon revealed that while the air observers for each division had had a considerable amount of training and experience, this training varied. They realized that some knew more about radio than others. Some were better API men and others were better photographers. They also realized that some observers had studied subjects during previous school periods that others had not even considered.

A new idea was born. To be really effective, air observation training should be standardized. This was the fifth phase in the evolution of Marine air observation. When two Marine divisions worked side by side in an operation, the air observers should be prepared to work for either division. The combat air observers who had flown in Saipan and Tinian felt they would have been better air observers if they had all gone to the same school. Before very much could be done about this idea the Fourth Division returned to its rest area in Maui and the Second Division commenced building its rehabilitation camp in Saipan.

So many air observers had either been lost or were ready for rotation after the operation that the Second Division decided to hold another air observers school on Saipan. The chief air observer, under the supervision of the air officer, drew up a 30 day syllabus, OY-1 and TBM aircraft were secured from nearby squadrons and the school was under way.

During the operation Army artillery units had monitored the Marine air observers nets. The Army Corps Artillery was impressed with the work done by the Marine air observers and at the request of the commanding general of the XXIV Corps Artillery, 14 Army officers were sent to the Second Division Air Observers School.

While this School was going on, the Fourth Marine Division also started another air observers school to train new observers to replace combat losses.

By now the idea born in Siapan for standardized training was beginning to take shape. A plan for centralized training of all Marine air observers was written and submitted to Headquarters Marine Corps.

Iwo Jima was next. Air observation was now well organized. Air observers were shot down and new observers took their places in the air.

When a carrier was sunk, air observers "hitch-hiked" back to Iwo Jima on another ship and resumed their flying. And something new was born—the night air observer. New weapons were discovered on Iwo Jima. Night air observers found they could locate giant mortars by their flash and could even detect movement of enemy troops in the dark. They also developed another type of mission—harassing the enemy. Flying low over enemy lines at night made the enemy stay down. It was a dangerous mission but an effective one.

Just before the Iwo Jima operation, Marine Corps Headquarters approved the plan for centralized training of air observers. It directed the activation of a school to be conducted by Fleet Marine Force, Pacific. The former chief air observers of the Fourth and Second Marine Divisions were ordered to Pearl Harbor and the Air Observers Training Center was organized.

An instructing staff of combat air observers was ordered to the Marine Corps Air Station on Oahu and in April 1945 the first basic class of 30 students commenced.

The syllabus contained all of the features previously found in the individual schools operated by different divisions. Students were trained for combat air observation in SB2C aircraft. A comprehensive research program was started.

In the Okinawa operation air observers performed excellently. After the operation air observers returned to the Training Center and attended refresher classes. They held several forums on air observation and compiled a report which is used today in teaching air observation to new students.

At the end of the war air observation had definitely built a permanent place for itself. Realizing the value of centralized training, Marine Corps Headquarters authorized relocation of the Air Observers Training Center at the Marine Corps Schools in Quantico under the new name—Air Observation School. The old staff of AOTC was ordered to Quantico to continue teaching air observation.

At present the Air Observation School is training new air observers to replace those who are due for rotation home or who are returning to inactive duty.

Today air observers are active in China and in Japan with occupation forces. They are conducting daily surveillance flights over occupied areas, patrolling railroads from the air, locating and checking progress of road patrols and taking photographs for study of their area. They are also being called upon to furnish security flights for convoys and to perform air supply and air search missions.

The establishment of the Air Observation School at the Marine Corps Schools insures that the Marine Corps will continue to have well trained air observers who will be ready to take to the air for peace time or combat duties whenever needed. END

The Army's Storm Boat

THE Army's new storm boat and outboard motor combination is designed and intended for use as a high speed assault craft to transport various types of small assault teams in making forced crossing of wide streams, lakes, and similar waterways under conditions where secrecy must be sacrificed for speed.

The storm boat equipage was used to varying extents throughout World War II in assault crossings of various streams encountered in the Italian campaign, the drive across France and on the islands of the Pacific. Probably the most noteworthy of such operations were the Rhine River crossings where, in most instances, the leading waves of assault troops were transported across the Rhine in storm boats.

The motor is a military adaptation of a high-speed racing motor and should only be operated by experienced and well trained personnel. The equipment is considered highly efficient when used as originally intended; it is not, however, considered suitable for use as a general purpose, heavy duty or work motor.

The storm boat and motor combination is capable of speeds of 30 to 35 miles per hour when carrying only its two-man crew and of 20 to 24 miles per hour when carrying its maximum useful load of about 1,860 pounds. The normal load for the boat, in addition to its two-man crew, is considered to be seven fully equipped infantrymen; it will, however, efficiently transport other similar combat teams such as 60 mm or 81 mm motor squads with piece and ammunition and the 37 mm antitank gun with 2 men and 20 rounds of ammunition. The boat is designed to withstand beaching on gently sloping banks when carrying its normal load and traveling at full throttle.

In Brief . . .

Several Marine units have been awarded the Presidential Unit Citation and the Navy Unit Commendation recently. Units receiving the Presidential Unit Citation were the Fifth Marines (Reinforced) for Peleliu and the First and Twenty-ninth Marines (Reinforced) for their participation at Okinawa. Navy Unit Commendations were awarded to the Third Amphibious Corps Signal Battalion for action at Bougainville, Guam, Palau and Okinawa; to the Amphibious Reconnaissance Battalion for action at the Gilbert, Marshall, Marianas and Ryukyus Island campaigns; to the Third Battalion of the Tenth Marines for Saipan, and to the sixth Engineer Battalion for the Okinawa battle.

President Truman has signed legislation increasing the Navy peacetime strength from 232,000 to 500,000 and the Marine Corps from 64,400 to 100,000 men and 7,000 officers. The measures also lifts the permissible regular line officer strength of the Navy from 12,760 to 35,000. The new law states that there shall be no discrimination against reserve officers. They will be subject to the same promotions, assignments and post-graduate training as regular commissioned officers. A preamble declares that the policy was adopted "to remove any apprehension on the part of Naval reserve officers regarding their opportunities in event of their transfer to the regular Navy."

The Secretary of the Navy has approved insignia to be worn by Marine Corps officers who are designated as Naval Aviation Observers (Tactical). According to authoritative information, the emblem shall be a gold embroidered or bronze gold-plated metal pin, winged, with silver center device superimposed upon crossed gold-color fouled anchors. The center piece shall have upon it, in bold relief and in gold color, two crossed guns. The insignia shall measure two and three-quarters inches from tip to tip of wings; silver center device shall be approximately one-half inch in diameter; anchors —three-quarters inch; and guns inscribed in a circle 13/32 inches in diameter.

A new decoration, the Reserve Special Commendation, has been authorized. This award, which takes precedence over campaign and service ribbons, will be given all officers of the organized Reserve who for a period of four years, not necessarily consecutive, between 1 January, 1930 and 7 December, 1941, have officially commanded in a meritorious manner an organized battalion, squadron, or separate division not a part of a battalion. Total service of not less than 10 years is also required. The Reserve Special Commendation Ribbon is the same as the Naval Reserve Ribbon, except for the addition of a three-eighths inch vertical stripe of myrtle green in the center.

Former Marines enlisting or reenlisting may wear civilian clothing on reenlistment furlough when a uniform issue cannot be made. However, officers granting such furloughs will assure themselves that men going on furlough have been given a complete issue whenever supplies allow. In the event that adequate clothing for a complete issue is not available, a statement to that effect will be entered on the furlough papers. The authorizing directive further states that when questions of identity are involved while wearing civilian clothing, the Marine is authorized to use his furlough papers instead of the regular I. D. card.

Attention of all Marine Corps personnel is invited to Alnav 108, dated 4 March 1946, which states that eligibility for wearing the three Area Campaign Medals has been tentatively suspended as of the following dates: European-African-Middle Eastern Campaign Medal—8 November, 1945. American Area Campaign Medal and Asiatic-Pacific Campaign Medal—2 March, 1946. The directive states that no authorizations will be granted for services extending beyond those dates. Service Record Books will be reviewed and corrected accordingly, and any authorizations for officers which conflict with the Alnav are cancelled.

Written examinations to establish candidacy for commissions as Foreign Service Officers with the United States State Department will be given on 30 September and 1 October, 1946. Servicemen and women will be given an opportunity to take this examination next fall if they appear to be qualified on the basis of applications submitted before 17 June, 1946. Eligibility requirements include: birth between 1 July, 1915 and 1 July, 1925; a United States citizen for 15 years; not married to an alien; hold a bachelor's or equivalent degree from an accredited college, and, ability to read with facility French, German, or Spanish.

1st MarDiv mortarmen at Cape Gloucester pass ammunition to their 81mm.

Mortars: Weapons of Opportunity

Only the finned projectiles of the manhandled mortar can give the infantry immediate, close in, high explosive support

By Capt Alfred E. Stoffer

MORTARS, in some form or other, have always had a place among the weapons of warfare since the introduction of gunpowder and firearms. In fact, we may go back further to the days of the catapult and liken that weapon to the present day mortar, for its purpose was the same, that is, to achieve high angle fire and place destructive missiles in places that couldn't be reached by any other means.

In modern warfare the need for mortars is vital.

During World War I, it was increasingly apparent that a weapon should be found that would give close, constant support to the infantry. The artillery was not always able to do this; while it could give good initial support, it could not always assist in later phases of the attack due to range limitations and an inability to fire on targets of opportunity close to troops. This absence of high explosive support resulted in large casualties to the rifle units who were forced to depend entirely upon fire and movement to gain objectives. The attempt, therefore, was made to try to attach artillery batteries to the infantry, but without success. The reasons were, first, that the artillery batteries were too vulnerable and, second, that the artillery trajectory was too flat to reach targets in defilade. The result was a frantic effort to devise some sort of high angle fire, close support weapon.

In its infancy the mortar was a make-shift weapon and a dangerous one to the crew operating it. It was actually no more than a pipe with a few supporting rods. Prior to World War I, the mortar, as we know it now, was not a standard weapon.

The first mortar to fill the bill was one designed by a Maj. Stokes of the British Army. This weapon left much to be desired in accuracy and precision. However, it was a tremendous improvement over earlier designs and did satisfactory work. This weapon was the forerunner of our present mortar. Later the French armament firm of Edgar Brandt perfected an 81mm mortar similar to the old Stokes but which embodied improvements which increased accuracy to a remarkable degree. This mortar was tested and accepted in 1932. Improvements were again made in 1937 and the mortar has remained the same from that time. The 60mm mortar was perfected about this time to fill the need for a small light weapon firing high explosive within the rifle company. This weapon and its ammunition were generally the same as the 81mm mortar except for its caliber and a few mechanical

differences. These two last weapons then are the ones in use now, and over which there still appears to be considerable disagreement as to their most profitable employment.

The manuals describe the mortar as a smooth bore, muzzle loading, high angle fire weapon. Taken at face value this description implies that the mortars are merely a glorified mechanical sling shot, while actually its stability plus its excellent mortar sight makes it a precision weapon of high accuracy. The weapon is capable of great rapidity of fire and because of the power of its projectiles has considerable blast power which makes its fire highly effective. The high curved trajectory of the mortar shell makes it possible to emplace the weapon in deeply defiladed positions where they are relatively immune from the flat trajectory fire of hostile rifles and MGs, and to a certain extent from that of artillery. It is a simple rugged weapon and not liable to stoppages. Worth mentioning here is the moral effect of mortar fire. Troops unconsciously fear these weapons. Knowledge of the high angle trajectory of the mortar shell accentuates the feeling that a fox hole is no protection—each man feeling that the next shell will find its resting place right down the back of his neck. This feeling is aggravated by an almost complete absence of the whistling sound (as of artillery), made by the shell in its flight through the air, until just prior to its strike. This bears directly on the fact that the mortar's greatest asset to the combat unit is its ability to fire from deep defilade into deep defilade. However, the mortar is not used to engage moving targets, obviously because of its type of trajectory, low velocity, and long time of flight.

It is mandatory, for the sake of mobility while under fire, that it be possible for all infantry battalion weapons to be carried by hand. The mortar is no exception. However, these loads are sometimes heavy and inconvenient as is the ammunition—a reason why large rugged men should be assigned duty in mortar units.

With regard to vulnerability, it is true that mortar personnel are better protected than members of other battalion units. However, unless mortar units are handled and emplaced correctly, destruction is almost certain to be the result. The greatest mechanical disadvantages include the peculiar coughing report, the muzzle flash, and the fact that the projectile itself can often be observed. In spite of these drawbacks, the mortar, when properly emplaced, will be hard to locate and hard to hit.

Bearing in mind their capabilities and limitations, the general mission of mortars is to give close support to the companies and platoons within the battalion. The value of the mortar lies in its power to search ground which cannot be dealt with effectively by MGs or artillery; and in the rapidity and flexibility of its fire. If practicable, the mortars are sited to cover the entire battalion or company zone. Preference is given, however, to the most dangerous routes of ingress (defense) or to that portion of the battalion making the main effort (attack) and so, in its role of supporting weapon, engages those targets which do most to impede the infantry advance.

The ability of the mortars to give support is limited by the weight of the ammunition and equipment, the vulnerability of mortars and crews, and the time required for indirect laying procedures. The ammunition problem is often a serious one, sometimes due to a fast moving attack, the weight of shells, limited transportation facilities within the infantry battalion and advanced location of the mortars. The four-foot silhouette of the 81mm mortar, the necessities of operation by a crew of at least two men, and the problem of supplying the heavy ammunition make it imperative to fire from fully defiladed positions. The necessity for conserving ammunition supply demands careful selection of mortar targets particularly in offensive combat.

Suitable targets for mortars are:

(1) Located, or approximately located hostile machine guns, mortars, and antitank guns (not in fortified positions or caves).

(2) Observed point or small areas targets protected from effective fire of rifles and machine guns, such as personnel or weapons in road cuts, embankments, or intrenchments. Reverse slopes and woods, which afford approaches defiladed from the fire of rifles and machine guns, are suitable targets in defensive combat. In offensive combat, reverse slopes and woods also are suitable targets in harassing a retreating enemy or to disrupt known or suspected movement or assembly of reserves. However, priority is always given to observed targets.

(3) Positions having overhead cover—for demolition shell (but note the use of white phosphorus for reaching troops in intrenchments.)

(4) Areas to be smoked in order to deny hostile observation. Area targets requiring zone fires are artillery targets. The necessity for conserving ammunition supply demands careful discrimination of mortar targets from those pertaining to the machine guns and artillery. As a general principle the mortar is given the mission of engaging those targets which cannot be taken under fire with any degree of success by the flat trajectory weapons of the battalion.

Because of the increasing demand for massed fire of all weapons firing high explosives, the coordination of mortars and artillery is, therefore, mandatory. For most effective use of mortars in conjunction with artillery, knowledge of the comparative characteristics of both weapons is necessary.

A sweating mortar crew lets one go in Saipan's hardfought cane fields.

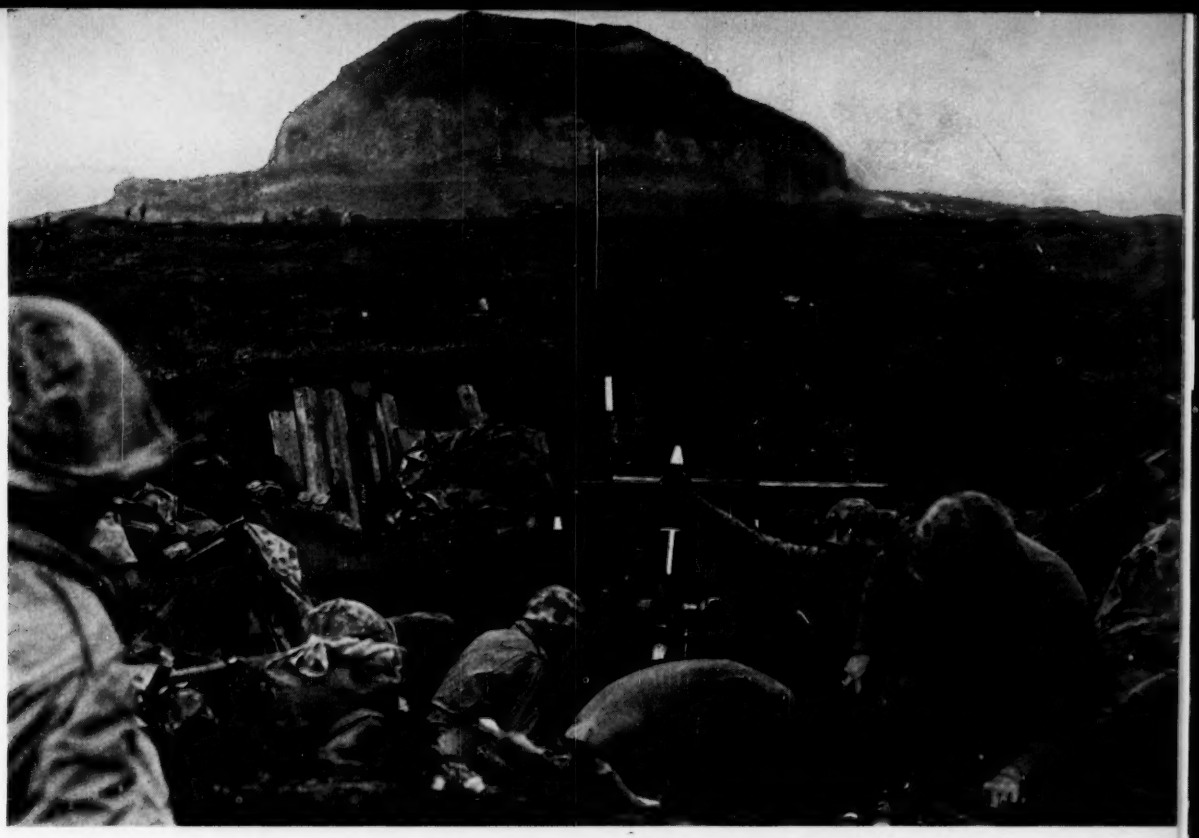
Artillery, as an organic part of the Marine division, is the most powerful supporting weapon of the infantry. This is due first to its long range that enables it to reach far out in front of the battalion and fire on enemy targets that other weapons cannot reach; secondly, artillery is emplaced further to the rear of the line of departure than mortars, thus eliminating some of the ammunition problems and assuring an adequate supply at all times; thirdly, the organization and communication equipment of the artillery permit the massing by battery battalions and regiments on any target. Artillery is, therefore, able to bring more intense fire on larger areas than mortars are usually able to cover. However, its fire is not flexible. Its organization and techniques are fixed and rigid and must rightly remain so. In the attack the battery can do one thing—fire a concentration 200 yards in diameter at any point requested by the supporting infantry.

The mortars are able to do this although not as well as the artillery. However, they can do several other things in addition, which the artillery cannot do. Suppose the single concentration preferred by the artillery is not sufficient to cover the area of hostile resistance which the battalion commander desires neutralized. The mortars can split their fire by two, three or even four ways to provide an impact pattern adopted to the size and shape of the target. The artillery under similar circumstances could only neutralize the single part of the area deemed most threatening to the success of our attack.

Likewise, the mortar trajectory is very elastic within wide limits; we can use it to search steep reverse slopes and heavily wooded areas with much more ease than can the artillery. There have been numerous occasions during the war when this versatility has been demonstrated.

At Saipan, about 1,800 yards off the beach, B. Co., 1st Bn, 6th Marines located a well camouflaged dual purpose gun in a narrow ravine to their front. Both artillery and naval gun fire attempted to neutralize this target but failed due to an inability to place fire along the bottom of the corridor. The 81mm mortars were then called upon and after two rounds for adjustment, accomplished the mission. For the above reasons we say that mortar fire is *flexible* because it can do more things for the battalion than is permitted by the rigid organization and ballistic limitations of the artillery. In other words certain conditions of terrain and range must be present in order for the artillery to deliver high angle fire into defiladed areas close to the friendly front lines.

Mortar fire properly conducted, is more readily available to the battalion commander than artillery fire. The mortars seldom if ever rely entirely upon electrical means for communication. Its wire lines are short. Mortars are habitually emplaced within visual distance of mortar OPs. Both are within easy runner distance of



An 81mm registers on Mt Suribachi in the uphill fight on Iwo Jima.

battalion CP and OPs. As a result, no ordinary communication battle casualty should ever deprive the battalion of its mortar support.

Mortar fire is more *responsive* to the will of the battalion commander during the recurrent crises of battle than is the artillery. The mortars belong to the battalion family; they are part of it and they share directly in the success or failure of the battalion effort. The artillery is remote and removed from the battalion area. It is at times a slow process to get requests for fire support through the various command and technical echelons. Also the artillery may be concentrating all its fire on a more vital sector with nothing to spare for our own battalion commander. It is in such cases that the usefulness of the mortar particularly reveals itself. It will fire the mission immediately in response to the battalion commander's order.

Mortars have other advantages in that they are capable of being manhandled rapidly from one position to another, and their rate of fire is much higher, a maximum being 30-35 rounds per minute with a sustained rate of 18 rounds per minute. However, mortars have disadvantages that limit their use. Being emplaced close to line of departure, the problem of ammunition supply is greatly increased. Limited communication equipment makes it difficult, though not impossible, to mass fires of platoons. Mortars are definitely limited by range, the most useful ranges being 2,000 yards and under.

For both the 81s and 60s the same general principles apply for the conduct and control of fire. In the attack the preparatory fires, that is, those fires which neutralize certain enemy installations which may later hinder our attacking echelon, are performed as directed in battalion and company *attack orders*. Thereafter, it is standard procedure to fire on targets of opportunity appearing within the mortars' sector of responsibility, in order to assist the battalion attack. In regard to these targets of opportunity (targets appearing during the advance of the rifle troops), it is customary for mortar units to carry out requests for fire from battalion or the rifle companies through the proper chain of command.

In the defense mortars fire on prearranged primary target areas (81 area 100 yards square, 60 area, 65 yards square), located in final protective line breaks and avenues of approach. This fire is brought down coincidentally with other FPL fires along the MLR. Secondary target areas are plotted throughout the battalion defensive zone both forward and in rear or the MLR. These secondary targets are fired upon order from the battalion or company commanders.

In exceptional cases, the observers for mortar units are given authority to engage targets on their own initiative. In this case, for both 60s and 81s, if it is evident that control by the higher unit commander is impracticable, mor-

tar unit leaders conduct fire according to their own judgment. Also within both of these units, the platoon or section commander will only on rare occasions attempt fire adjustment, but will assign fire missions and will observe the performance of his entire unit from the vicinity of the battalion or company commander.

There will be numerous occasions when it is not possible or advisable for either unit to concentrate the fire of all of their weapons on one target but must distribute it among several. In this case the platoon or section commander may be forced to assist in fire adjustment as there will be periods when each mortar must be adjusted on a different target. The reason for this is obvious inasmuch as an observer may not be able to calculate fire data quickly enough or may not have the observation over all the targets assigned by the higher echelon.

A universal rule should be established among all mortar observers that in an attack situation a knowledge of the location of the rifle units is their responsibility and the greatest care must be exercised in keeping them under observation. This is mandatory so that never will there be a time when mortar unit leaders will be unable to carry out a fire mission because they do not know the location of a front line rifle unit. Again it is important in the event the enemy suddenly launches an unexpected and suicidal counterattack. Occasionally this will happen so quickly that there is not time for orders to be sent from higher authority. It is in such an emergency that mortar small unit leaders *must*, without hesitation, lay down as intense a volume of fire as possible in the threatened area. An inefficient observer may not fire at all because he does not know the location of the friendly troops in area or he may fire anyway and because of his lack of knowledge, place the concentration among our own men. Needless to say, this will have a demoralizing effect on our troops and will greatly facilitate the enemy effort. Conversely, the efficient observer who immediately lays down fire in the right area will be a vital factor in halting such an attack.

The mortar fills a need that has long been felt in the support of landing attacks. Because of its characteristics it takes up very little room in a boat, is relatively easy to get ashore and can be rapidly set up to deliver a large volume of accurate fire. Inasmuch as artillery cannot be brought ashore until the infantry has gained sufficient room to afford it protection, and in view of the fact that naval gunfire will have to lift to rear areas when the troops hit the beach and that air support cannot last indefinitely, the troops on the beach are apt to be left without any supporting fires. The rate of expenditure of ammunition in support of a landing will probably be much higher than it would be in a normal land attack since the mortars will have to deal with more numerous targets and will be required to lay down almost continuous fire support until the troops are well established on the beachhead line. Consequently, a continuous and adequate ammunition supply for the mortars is vital and plans should be made accordingly. As the attack moves inland the situation changes to conventional land warfare and mortar units act accordingly.

Mortar units are responsible for their own local security requiring standard security measures at all times. This must be done in bivouac, in the position area and during movement.

It is true that mortar units enjoy a certain

A crew from the 21st Marines sends a shell flying across Iwo's black cinders.

During a momentary lull on Iwo Jima this mortar squad relaxes in its gun pit.

amount of all-round protection from the depth disposition of the rifle companies, both in the attack and defense. However, this is remote security upon which mortar unit leaders will do well not to rely on.

Adequate details must operate as forward and rear points and flank security when moving through territory occupied by the enemy. Snipers and by-passed enemy groups are always a menace to mortar units, particularly so in jungle terrain. Remember, mortar personnel are never actually looking for the enemy; they are almost always occupied with displacement, organization of fire positions, or execution of fire missions. Because of this these units are most vulnerable and unit leaders must use every means possible to guard against surprises. Constant watchfulness will insure the good order and efficiency of the mortar personnel and will eliminate the possibility of the destruction of the battalion's or company's own source of high explosive fire power.

Camouflage is a necessary part of good security. Mortars have a high silhouette and large muzzle blast which makes them easy to spot from the air. This is also true of observation from the ground but inasmuch as firing positions usually are in defilade, observation by the enemy is generally not possible. But, because the mortar is vulnerable to observation from the air, all natural concealment, augmented by artificial means (camouflage) must be employed.

In conclusion, unit commanders will make the basic decisions governing the tactical employment of the mortars. It follows then that mortar unit commanders have a relatively simple job as far as tactical decisions are concerned. The value of mortar units will be measured by their ability to give close, effective support of rifle units. Therefore, mortar units, well trained in technique of fire, in good physical condition and strongly imbued with offensive spirit, will be an exceptionally valuable part of the battalion organization, saving the rifle units many needless casualties. **END**

VACANCIES exist on the Marine Corps GAZETTE *in the editorial, art, and business departments. Applications are desired from both officer and enlisted personnel. Editorial applicants should be conversant with feature writing, manuscript preparation, copyreading, and production. Art requirements are a knowledge of illustration, layout, and typography. Business applicants should understand circulation, advertising, and bookkeeping procedure. Applications should be addressed to the Editor and should include a resume of publications experience as well as formal education. Applications should also include present station and duties, eligibility for discharge, and whether regular or reserve.*

Infrared Weapons

Bizarre equipment that used invisible light to reveal enemy night movements

By Pfc Robert L. Klaus

ONE of the most amazing pieces of equipment to come from the war is the "Sniperscope". Primarily a night-fighter, the Sniperscope is one of the family of infrared weapons which are as unusual as their name implies.

The Sniperscope was developed by the Engineer Board at Fort Belvoir, Va., late in 1943 and was used in the Pacific during the 1944-45 campaigns particularly to prevent Japanese troops from infiltrating behind our lines. One source places the effectiveness of the Sniperscope rather high, claiming for it 30% of all Japanese casualties from small arms fire during the first seven days of the Okinawa campaign.

The Sniperscope, as do the rest of the infrared units which were developed, uses the principle of sight without light. Infrared has been known for many years to have the power of penetrating mist and the darkness of night.

It has been used extensively for photographic work under adverse weather conditions. One of its many uses is in the "infrared sextant", a sextant capable of piercing fog or haze, enabling the ship to "shoot the sun" and check its longitude and latitude.

The infrared units developed for ground troops are a step further along this line. Very simply, they work like this. The infrared unit, consisting of a light source and a telescopic viewer, is mounted on a weapon. The light source, which looks like a black spotlight, emits an infrared light which shines on enemy personnel and the reflected image of the foe is picked up by the viewer. The infrared-armed man need only sight in on the image in the viewer and squeeze the trigger. The image, of a greenish hue, is remarkably clear as to details.

The use of infrared weapons was started simultaneously and spontaneously in Germany, Japan and the United States. German equipment never got fully into mass production and Japan had great difficulty in putting hers to use.

Infrared units may be mounted on shoulder weapons, field pieces, helmets for jeep, truck or tank drivers—in short, on almost anything. The placement of the units enjoys complete freedom in that enemy troops are incapable of detecting the infrared light with the naked eye.

German halftrack with large infrared source.

As was common with them, the Germans made unusually large light sources and telescopic viewers, mounting them mostly on halftracks and tanks. Japanese equipment, though smaller, was better than the German equipment, although not as good as that used by Americans.

When jeep mounted, the infrared light sources are placed between the two headlights. Needless to say, the regular headlights of the jeep are not used when the infrared unit is being employed. The driver of the jeep wears an over-sized helmet which has a telescopic viewer before each eye. Thus, when looked through, the images blend together, forming one complete image.

When mounted on a half-track, a huge light source, approximately thirty inches in diameter is em-

Infrared sniperscopes mounted on a variety of U. S. rifles and automatic weapons.

ployed. The telescopic viewer is about the size of a normal telescope. This light may be used to direct antiaircraft fire, search surrounding terrain, or locate enemy activity. The large infrared unit on the half-track is not used to assist the driver of the vehicle, since he is equipped with his own infrared unit consisting of headlights and the helmet.

The infrared unit may be mounted on a variety of weapons including the carbine, the M1 rifle, the Browning automatic rifle or the .50 cal machine gun. When mounted on the M1 rifle, a special leather cheek rest is required. On a shoulder weapon, the light source, which is under about six inches in diameter, is placed under the upper hand guard. The telescopic viewer is attached onto a special holder situated on the left side of the rifle, directly across from the bolt and in line with the leather cheek rest.

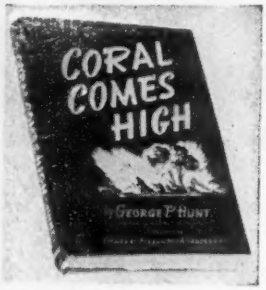
The principal part of the infrared unit is the image tube. This tube, about the size of an ordinary radio tube, transforms the invisible infrared rays into a readily discernible image.

The field of infrared weapons is a comparatively new one, and more improvements are expected. Someday they may be employed to aid police in crime detection, to replace glaring lights in public places, and other peacetime uses.

END

Driver of this jeep equipped with infrared headlights wears a special helmet.

Two New Books by and about Marines



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The Infantry-Tank Team in Jungle Operations

LtCol Wilber C. Strand, AUS

THE following observations governing tank employment are a result of training and combat experience based on careful consideration of the capabilities of tanks and the limitations imposed upon them by jungle terrain.

1. Tanks must be employed only over terrain suitable for tank movement and against definitely located enemy resistance.

2. Infantry-tank attacks in jungle terrain are normally for limited objects only; therefore, the plans must include measures for rapid reorganization of all objectives.

3. The fire power of the tank assumes great importance in the jungle because of the limitations on maneuver and shock action. Therefore, whenever possible formations must have a maximum number of tanks in line to exploit their fire power.

4. To facilitate control, tank formations must be very simple. Wherever possible tanks must be carefully placed in attack formation behind the line of departure.

5. The infantry-tank attack requires maximum fire support by infantry and artillery weapons, both before and during the attack.

6. Advances must be by short bounds with frequent short halts for reorientation and reorganization.

7. Tanks must be employed in mass, not piecemeal, and in sufficient strength to insure continuity of effort.

8. Tanks and infantry must develop perfect teamwork; the tanks must provide accurate, direct fire against resistance holding up the infantry advance; the infantry must provide close-in security for tanks during their approach, attack, and withdrawal.

9. Constant communication between infantry and tank commanders must be maintained.

10. Maximum use must be made of bulldozers and engineer equipment to assist movement of tanks in jungle terrain.

Tanks are almost blind in thick jungle and for that reason infantry squad leaders must designate to tank commanders obstacles to avoid and targets to fire on. Since enemy pillboxes and positions are extremely well camouflaged, target designation is difficult. Tracer fire for the designation of targets to tanks in the jungle is unsatisfactory. The use of colored smoke grenades proved most successful. It was found that fully charged grenades produce too much smoke and obscure the target. However, if the grenade fuze is unscrewed and half the charge removed an adequate amount of smoke is produced. To obtain a longer range, projection of the grenade from a rifle is desirable. The best results are obtained by arming the rifle grenade before firing since this produces a trail of smoke to the target.

An early and thorough reconnaissance by infantry, tank, artillery, engineer, and communications officers is essential. Detailed reconnais-

Crouching troops move in behind advancing tank.

sance is necessary in order that all commanders concerned may formulate a mutual plan of action.

Routes of approach—If suitable routes of approach for tanks do not exist, they must be prepared by the engineers.

Natural obstacles—The jungle contains many natural tank obstacles such as swamps, dense forest and undergrowth, precipitous slopes, coral or volcanic ridges, and numerous streams. Engineer troops must assist tanks by clearing trails and improvising bridges or crossings in swampy terrain. Medium tanks can operate through very thick undergrowth which contains small trees and matted vines, but they must detour around large trees, stumps, and fallen logs which are more than two feet high.

Minefields—It must be anticipated that the enemy will employ minefields and antitank guns to cover likely avenues of approach. Preliminary reconnaissance must be thorough to avoid the use of tanks over mined areas. If an attack is to be made over such an area, the mines must first be removed, either after the use of mine detection apparatus under cover of darkness or smoke and heavy protective fires, or by mortar or artillery fire, bangalore torpedoes, or primacord.

Tank Park—It will be necessary to establish a tank park near the main supply routes. It should be protected from hostile artillery or mortar fire, if possible, and secure from enemy raiding parties. Dumps of fuel and ammunition should be established and facilities provided for the repair and maintenance of tanks and ordnance.

Reservicing Point—This point must be located conveniently near the zone of action. Normally two units of fire and one refill of fuel should be maintained at the reservicing point. Emergency maintenance crews also should be present.

Attack position—This is an area close behind the front line where the tanks carefully deploy in their attack formation, and where the infantry and engineers take position in the formation, and final instructions are given. Here timely coordination with front line units must be effected and information on additional targets obtained. Normally not over 20 minutes should be spent in the attack position because excessive delay may warn the enemy of the impending action. Selected routes from the attack position to the line of departure must be reconnoitered in advance and marked with guides or tape.

Rally Point—The rally point may be the attack position, the reservicing point, or some other designated area. Plans must be made for emergency maintenance crews to meet the tanks at this position where, after an attack, the tanks are reorganized and reserviced. Casualties should be evacuated from this point and disabled tanks towed back to it.

Advance—The infantry-tank team line moves forward at a slow rate. It is the duty of the tank company commander to keep the advancing tanks in line; and all commanders must be particularly careful to prevent tanks from firing on each other or on friendly troops. During counterattacks an infantry officer or NCO from the immediate front lines should ride in each assault tank and indicate to the tank commander the positions held by our troops and any known enemy.

The infantry-tank team in action—The team goes forward in three mutually supporting echelons or waves. The mission of the assault tanks, which advance slowly, firing cannon and machine guns at close range, is to gain fire superiority over the enemy, to force him into cover, and to clear out jungle growth so that enemy pillboxes may be seen. If a target is located, the tanks destroy it with cannon and machine gun fire.

In thick jungle, the two support tanks of the team advance along the tracks made by the two flank tanks of the assault wave. The mission of the support tanks is to knock out pillboxes and entrenched enemy which have been passed by the assault tanks, to cover the assault tanks, and by canister and machine gun fire prevent the enemy from approaching the tanks to disable them with mines or incendiaries. Support tanks designate targets to the assault tanks by radio-

transmitted messages coordinated with smoke grenades thrown by the infantry. They also destroy snipers in trees with canister fired into tree tops, or with AP and HE fired into tree crotches.

The mission of the infantry squad in rear of each support tank is to locate enemy pillboxes and intrenchments and to designate these targets to the tanks by throwing or projecting colored smoke grenades onto them and by giving the appropriate directions to the tank commander. The squad also destroys by fire any enemy seen above ground, especially those who attempt to swarm over the tanks and damage them. In addition, it searches all holes and pillboxes which have been passed over and destroys the enemy therein with flame throwers, grenades, or explosive charges. Particular attention must be paid to enemy who feign death.

Infantry-tank teamwork paid off in dead Japs.

The mission of the team reserve is to repel enemy counterattacks; it also provides a reserve for replacing damaged tanks. Reserve tanks may be employed to knock out by-passed pillboxes or to fire on snipers. The enemy on the flanks may withhold fire until the assault tanks have passed and then deliver flanking fire on the infantry and the tanks. Infantry squad leaders, therefore, must make every effort to locate enemy positions and to direct the fire of the tanks toward them. To facilitate this, tanks and infantry should cease firing for short periods.

The infantry platoon leader must decide when to cease fire, and give the necessary orders. He must be well forward and in a position between his two advance squads to enable him to keep fully abreast of the situation at all times, and maintain adequate control. He must be accompanied by two or three riflemen who precede him for close-in protection, and a radio man to operate the SCR 536. ★

Radar in Ground Combat

BEFORE the end of the war, Signal Corps developments in radar had made possible the long-range plotting of enemy mortar and artillery positions and the detection at night of moving troops and vehicles on enemy-held roads.

Accurate spotting of enemy gun positions at more than 5-mile ranges were accomplished through radar detection of artillery and mortar projectiles in flight. This was made possible by the use of a specially adapted Signal Corps radar to obtain accurate oscilloscope bearings on both the upward and downward paths of an enemy projectile. From these bearings, the entire trajectory of the shell was plotted and extended geometrically to indicate the exact location of the gun.

This type of radar had an accuracy of 20 yards in range and one-third of one degree in azimuth (direction), and could spot a hidden gun site five miles distant with an error of not more than 60 yards. The radars used to detect enemy night traffic had the uncanny faculty of being able to track all moving objects in the area covered by the radar beam. These too were standard Signal Corps radars which had been especially adapted for this function.

When an ordinary radar "scans" a stretch of enemy-held road, it detects every object along that stretch of road, and the operators are unable to distinguish the enemy targets from trees, hills, and other features of the landscape. For this reason it was necessary to modify radar sets so that only moving objects would be registered.

This modification was based upon what physicists call the "Doppler effect," and because of it Signal Corps scientists knew that radar echoes would be reflected back at a different frequency from a moving object than from a stationary one. Radar was modified, therefore, to filter out echoes from stationary objects and present only data from moving objects.

With this modification, the radars could be operated much as they were in the tracking of enemy aircraft. Precise data on the range and direction of movement of the enemy vehicle were supplied by radar operators to artillery units, which used that data to aim their guns. The radar could also spot the burst of the shells in relation to the target and tell the artillerymen how to correct their aim.

Vehicular targets were detected by radar at ranges up to 16 miles, although 10 miles was the average maximum range. Individual troops were detected at ranges up to three miles, and the radar technicians became so proficient that they could estimate the number of enemy soldiers in a group and the type and speed of enemy vehicles.

Some astonishing results were obtained during the French and German campaigns. On one occasion radar data was used to inform an American patrol of the presence of a German patrol about 200 yards to their right, with result that the enemy patrol was ambushed.

On another occasion, the radar picked up three self-propelled enemy guns, which were moving forward. A battalion concentration dispersed them. At another time a convoy of 40 vehicles was picked up and artillery fire was placed on the area until all movement ceased. During the month of February, 1945, nine per cent of the total artillery missions fired by our forces in Germany were on targets located by radar. ★

The Bailey Bridge

By Capt John A. Thierry, Engr

TO the bridge engineer, World War II has been a war of prefabricated portable bridges designed for rapid erection close behind assault troops. Both Allied and enemy armies have developed all types of prefabricated fixed, floating, and suspension bridges for foot, vehicular, and even railway traffic.

Of the multitude of designs adopted, the Bailey bridge, named after its British inventor Mr. Donald Colman Bailey, proved to be the most significant. Throughout the war, it was the principal tactical fixed bridge of the Allied armies. It also served as the standard floating bridge of the British Army. Originally designed as a fixed bridge for single-lane vehicular traffic, it was adapted successfully to a multitude of other uses and became the first all-purpose military bridge. It was unequalled in speed and simplicity of erection, economy of construction over a great range of spans and capacities, and adaptability to widely different site conditions.

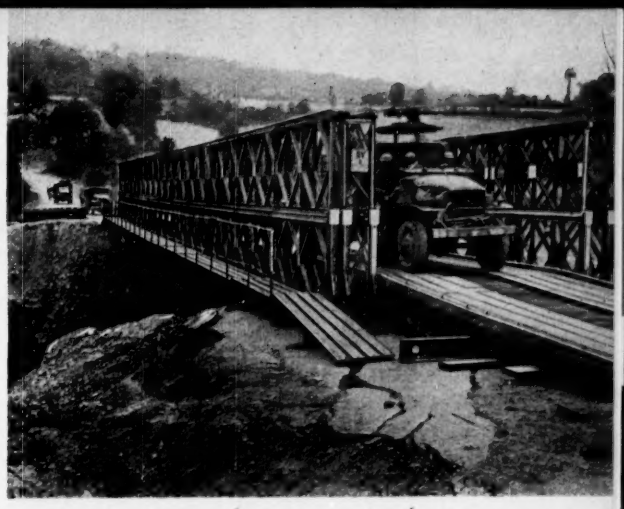
The Bailey is designed primarily as a tactical support bridge to cross infantry, armor, and artillery in quantity after elimination of enemy small-arms and observed artillery fire from the site. Speed of erection is essential for tactical success. Equipment must be portable so it can be moved forward rapidly as the advance continues. The fixed Bailey is ideal for such use. It can be erected quickly at almost any type of site. While tanks roll across, a semi-permanent trestle bridge can be built underneath, ready to be opened in a matter of minutes by merely rolling back the Bailey. The floating Bailey is regarded, however, as a semi-tactical bridge to replace the steel treadway bridge which can be built in less than half the time.

Because of its availability, speed of erection, and ease of repair and reinforcement, the fixed Bailey bridge has often been used as an assault bridge with the site still under light enemy fire. Although normal launching methods are generally used, the British have developed tank-mounted mobile assault bridges.

Bailey equipment has proved nearly as valuable for semi-permanent bridges in the zone of communications as for tactical bridging. These bridges are mostly two-lane highway and single-track railway bridges. The latter were born of necessity in Italy when standard railway bridging failed to show up. Bailey railway bridges were later used extensively in France. Deck-type construction with welded bracing is usually used. Other applications are in port construction and floating bridges. In the Normandy artificial harbors, Bailey spans were used for shore and pier-head connections. The floating Bailey on barges has proved to be the best type of floating semi-permanent bridge.

In Italy, with its mountain gorges and swift rivers, more Bailey bridges were built than in any other theater. In twenty months over 3,000 fixed Baileys were erected by the Fifth and Eighth Armies—a total length of over 55 miles, the average bridge being about 100 feet long.

Early in the Italian campaign, the Germans frequently blew arches and left piers standing.



In Europe 110-foot triple truss fixed Baileys effectively replaced blasted bridges.

This situation was made to order for the Bailey. Thus over the Sangro River, at the site of a brick arch bridge where the Germans had blown 19 spans but left 14 piers standing, the British erected a 1,126-foot Bailey, launching it as a continuous bridge. When the Germans began to blow piers too, the Bailey panel crib pier provided the answer and became a feature of nearly every long bridge in Italy. A 70-foot pier built in the Appennines by the Eighth Army is the highest on record.

Most of the floating Bailey bridges were built over the Volturno and Po Rivers. Fifth Army built 12 floating Baileys in the Italian campaign. This compared to its 173 steel treadway bridges which were more suitable for the narrow mountain streams (average 110 feet). The British also experimented with mobile assault Bailey bridges and used one mounted on two tanks to cross the Rapido River.

In France and Germany, the Bailey bridge was the principal fixed tactical bridge for all armies, whereas the steel treadway and floating Bailey bridges were the principal floating bridges of the United States and British Armies, respectively. From the Normandy beaches inland, the fixed Bailey was carried and built side by side with the steel treadway bridge. Both bridges were often constructed under enemy fire. Speed was the keynote. Bridge equipment accompanied reconnaissance jeeps and construction frequently started before higher commanders even knew the infantry had crossed.

The culmination of bridging in the European theater was the Rhine crossing. Although the British armies used the Bailey for fixed as well as floating bridges, the American armies made most use of the floating equipment in this crossing. The American armies built nine and the British seven floating Baileys. Both armies used British pontoons. Average bridge length was well over 1,000 feet and average rate of erection about 30 feet per hour, one-half the rate for the U.S. 25-ton pontoon and steel treadway bridges. For this reason, floating Baileys were often used to replace the steel treadway bridges.

In the Far East, the Bailey bridge was not extensively used until the later phases of the war. On Guadalcanal several short spans were built, but Bailey construction was on a small scale in the Pacific area until the Philippine invasion. When the Japanese destroyed hundreds of bridges in their retreat on the Islands, Bailey spans provided the answer. Construction was frequently under severe conditions due to scarcity of equipment, restricted sites, poor foundations and flash floods. Examples of bridges that rivalled European bridges in size and technical accomplishment were the 410-foot continuous double-story Bailey on piers over the Baman River and the 210-foot triple-story bridge with mid-story deck over the Blued River on Kennon Road, Luzon.

In Burma, the Bailey was used as a semi-permanent bridge at several points on the Ledo (or Stilwell) Road, but heavier equipment more suitable for such construction was generally preferred. Over the Schweli River, United States engineers built a standard British suspension bridge with 40-ton capacity and a 420-foot clear span, the longest of the war. Over the Chindwin and Irrawaddy Rivers, the British constructed floating Baileys over 1,000 feet long.

The Bailey bridge will profoundly affect the future developments in military bridging. Although details of the ultimate military bridge can not be predicted, certain trends can be foreseen as a result of experience with the Bailey.

Of first importance is the concept of an all-purpose bridge. The Bailey was a pioneer development in this respect, providing equipment adaptable for fixed, floating and suspension bridges as well as for piers. However, it had a great number of parts—28 standard parts and over 100 special parts. Much simplification can be expected. The Bailey bridge is not then the ultimate military bridge. Rather it is the pioneer, which more nearly than any other points the way to the ideal. ★

Decisive Role of U.S. Navy

AN ARGUMENT is reviving over the relative part played by the U. S. Navy, the Naval Air Force and the Army Air Forces in the destruction of the Japanese Navy and the Japanese merchant marine during the war. This argument, which has reached as far as the White House, is important for the effect it has on the increasingly hot issue of which arm of the military service is to have what function in the future.

The Army Air Forces are insisting that they be given control over all except carrier-based aircraft. They insist that land-based aircraft, controlled by the Army, can dominate the seas. To counter this argument, the Navy has offered the record of performance in the Pacific war to show that the Army Air Forces played a relatively small part in the sea phase of that war.

The Navy's view is that it was the destruction of Japanese shipping and Japanese naval units that strangled Japan and reduced her ability to resist the air assaults on her mainland, that led gradually to her surrender.

On the basis of joint Army-Navy intelligence reports, it now is revealed that Army Air Forces in the entire Pacific war are credited with the sinking of only one combat ship larger than a destroyer. That ship was the cruiser *Yura*, sunk on Oct 25, 1942, and Navy dive bombers share witht Army B-17s the credit for the sinking. Dramatic stories of Air Force bombers blowing up Japanese combat vessels of all sizes and in large numbers are not borne out in the cold, factual reports assembled on the basis of now-known results.

Destruction of Japanese sea power involved two phases: destruction of the Japanese Navy itself, and destruction of the Japanese merchant marine.

In combat ships, Japan lost a total of 331 during the war. The official assignment of credit for these sinkings, in which Army intelligence joins, is the one that follows:

Surface naval craft are credited with having sent to the bottom 102 of the Japanese naval vessels, or about one third.

Submarines are credited with having sunk 94 naval vessels, as runner-up to the surface ships.

Naval aircraft, largely dive bombers from aircraft carriers, sank 86 ships, on the basis of the official report.

Army aircraft are credited with 15 sinkings of Japanese naval vessels or about one out of each 22 vessels sunk. Most of the victims of Army aircraft were small vessels, not aircraft carriers or battleships or even cruisers.

Other causes, including mines, and unknown causes accounted for the other 34 vessels.

The Navy argument is that this record shows that Army bombers, which are not especially designed or operated in the specialized field of naval warfare, cannot take over the highly important role of sea operations. Naval aircraft, used in highly specialized operations and with crews having long training in the art of warfare at sea, showed a much larger return.

In merchant vessels the record is pretty much the same, although here the returns are those built largely from Japanese naval reports and not fully confirmed as yet by American intelligence studies. The Japanese report 3,129 steel merchant vessels lost.

Submarines are credited with having sunk 1,750 of these vessels, or more than half.

Aircraft, mostly carrier planes, are credited with having sunk another 876, in the Japanese report.

Mines, mostly mines that were laid by planes, sank 239 more Japanese merchantmen.

Other causes, including action of Navy surface ships, are credited with having sunk the final 264 ships, about a twelfth of the total.

Thus, less than 14 per cent, at the most, of the Japanese merchant shipping could have been sunk by Army aircraft, according to these figures.

Throughout the Pacific war, domination of the sea was found to be necessary for either side to advance. For this reason, the destruction of the Japanese fleet was given the highest priority. Just how this was done now can be pictured from documented reports of the Joint Intelligence Center, Pacific Ocean Area, which combines both the Army and the Navy records.

The Battle of Midway, according to these reports, was the first crippling blow to the Japanese Navy after the U. S. Fleet had been laid low by enemy carrier-based planes at Pearl Harbor. At Midway, in mid-1942, the enemy struck with four carriers, two battleships, several cruisers, and destroyers, and succeeded in launching its first wave of planes against the American-held island.

This Japanese force then was attacked by United States Navy bombers, shore-based Army

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JAPANESE SHIP LOSSES*

Cause	Naval*	Merchant Marine**	Total
Surface Ships	102	264	366
Submarines	94	1750	1844
Naval Aircraft Army Aircraft	86 15	876	977
Mines and Others	34	239	273
Total	331	3129	3460

*Based on joint Army-Navy Intelligence reports. **Based on Japanese Naval reports.

torpedo planes and Marine dive bombers from Midway. There were no hits. Then carrier torpedo planes attacked the Japanese formation, but were annihilated. Still there were no hits. Finally, carrier dive bombers made a series of attacks which eventually resulted in all four Japanese carriers being hit and later sunk.

Meanwhile, a Japanese landing force of several transports, protected by two battleships as well as cruisers and destroyers, approached Midway from the other direction and was brought under a prolonged attack by Army heavy bombers. No ships were sunk or even badly damaged. But when the loss of four carriers of the striking force was discovered, the Japanese admiral ordered his landing force to turn back.

At the same time, a third force of heavy cruisers approached Midway. After they, too, had turned back, one was sunk and another heavily damaged by carrier dive bombers.

Thus, action by naval aircraft based on carriers succeeded in winning one of the war's most decisive battles, one in which the Japanese lost their carrier superiority in the Pacific. In this case, land-based aircraft failed to score knockout hits on enemy warships, and carrier planes turned the tide of battle.

In the Battle of the Coral Sea, a month before, the same thing had occurred on a smaller scale. There a Japanese landing force, protected by three aircraft carriers, cruisers and destroyers, had been headed for Port Moresby, and a shore-based Army air attack had failed to stop it. Navy planes flying from carriers then sank one Japanese carrier and seriously damaged the others, so that the enemy task force was compelled to retreat.

Landings on the Marshalls, in late 1943, later showed that shore-based planes could not prevent the U. S. Fleet from moving in and destroying shore fortifications by naval bombardment, as well as landing and supporting an occupation force.

Carrier raids on Truk and Palau followed. Conducted in the face of strong opposition by shore-based Japanese planes, these raids were highly effective and indicated that land-based air power could not prevent carrier operations even against a major base.

Finally, U. S. assaults and occupation of the Philippines, Saipan and Okinawa were made under the protection of carrier-based planes, and succeeded in the face of opposition by shore-based enemy planes. Despite heavy damage inflicted by suicide pilots at Okinawa, Japanese land planes never succeeded in turning back a United States landing force that controlled the seas.

This, the Navy contends, is sufficient proof that control of the seas or even of shore cannot be effected by Army land-based planes, be they bombers, torpedo planes or even dive bombers. Specialized carrier-based dive bombers are needed for the job, they say.

As a result, the argument over who should control weapons to protect the U. S. coast and vital sea lanes is waxing hot and has reached the White House. The debate over who won the sea war in the Pacific has not ended, but has broadened to include the Navy's role in future warfare. And the record, contrary to public opinion during the war, now shows that the Army Air Forces were not largely responsible for wiping out the Japanese Navy, that U. S. Navy carrier planes and submarines destroyed most of the enemy naval units and made possible the American advance across the Pacific. ★

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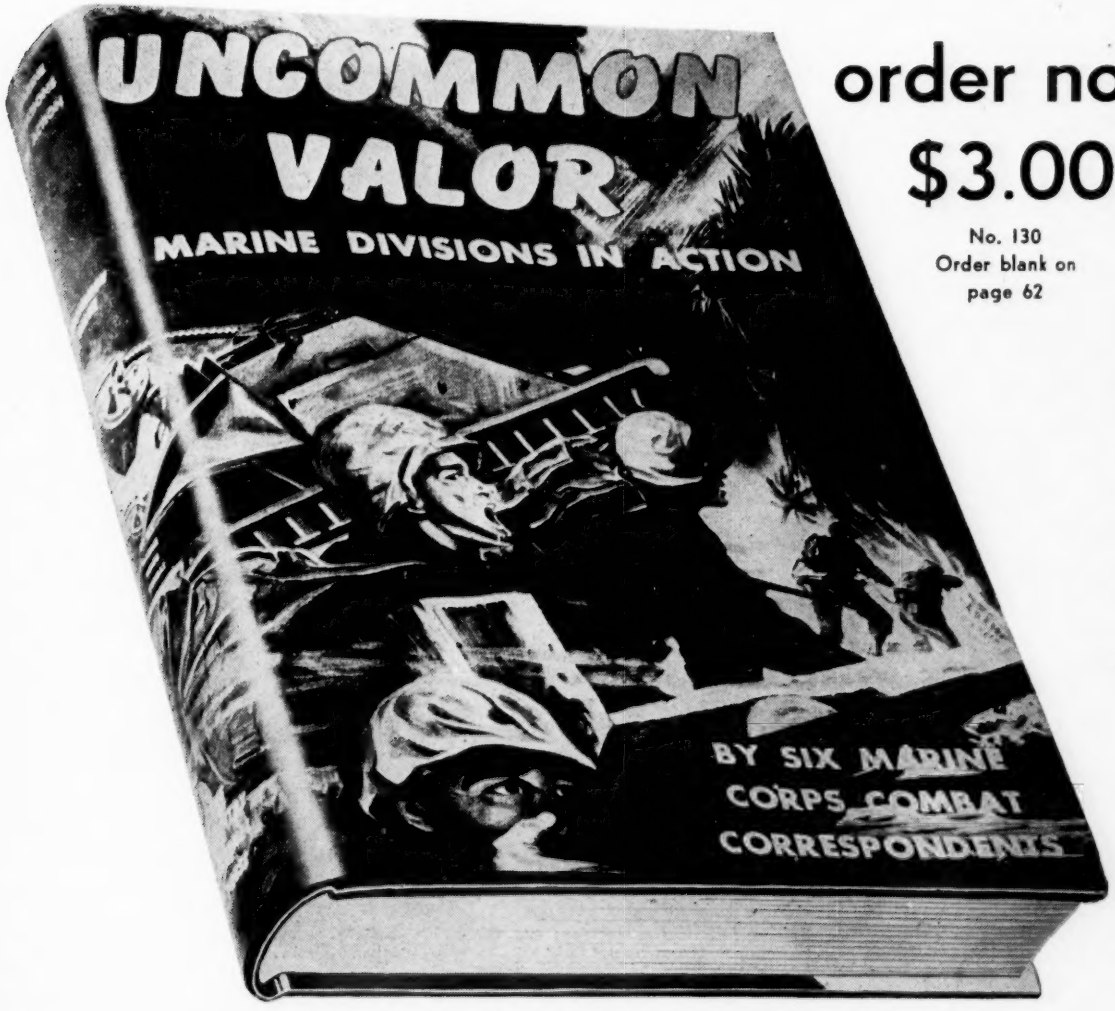

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UNCOMMON VALOR

Marine Divisions In Action

By 6 Marine Combat Correspondents who were there and fought with the Divisions they wrote about.

Nostalgia for War

A former Marine combat correspondent looks back at the comradeship of battle

WE SAY that the men who fought this war don't glory in it, that they hate war. And we think we mean what we say. But it isn't true. We are more war-minded than we know When I asked myself recently, "Do I hate war?' I had to answer, "I don't." I had to go on from there. I may secretly love war. Self-examination shocked me; I suddenly was aware of something I hadn't known about myself. I suspect that more of the millions who fought this war feel this way than admit it, even to themselves.

War is ugliness. War is death. War is destruction. War is heartbreak and sorrow. The men who fight wars, when they fight them, hate war. They hate its blood and carnage, its grime and filth, its demands on their bodies. They hate its separations, its regimentation. But when wars are over, day after day that's easier to forget.

You don't forget the other side of the war. You don't forget that in war you found the only Christian brotherhood you ever knew. You don't forget that in war you found complete selflessness. You don't forget learning in war that a man could love the other fellow more than himself, if only for a minute, an hour, a day. You don't forget that in war you saw men who loved life give their lives for you.

I didn't know that kind of living before I went to the war. I haven't known it since. I miss it. The absence of it, the brutal contradiction of it in peace, makes it the harder to forget.

We have returned to a world at peace. It is a world of dog-eat-dog. Probably it has always been like that. Probably it hasn't changed much. Probably we haven't either. We've taken up our places in this world, and are living by its rules. But we can't forget that once we knew—and were—men who lived and died by other rules.

Living on that plane for an hour, I am dissatisfied with anything less. William James says the world, in peace, must find the moral equivalent for war. Lacking that, peace is inadequate. Lacking that, peace produces nostalgia for war.

When we tore into Germany and Japan, thousands of World War I veterans—bankers drawn from their banks, judges from their benches, farmers from their farms—flocked back to war. There may be a moral to it. Certainly, a national preparedness program and a foreign policy based on frank recognition that we're not as peace-loving as we say—that we're not even a neutral-minded people when there's a first-rate scrap going on—might have dissuaded our enemies from attacking us in both wars.

Our task is at once simple and staggering. We've got to forge a world of peace out of the same steel we forge a world at war. It's insane that war should bring out our best qualities and peace our worst.

By J. G. LUCAS

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